

THE ART OF CENTRAL BANKING

BY

R. G. HAWTREY

AUTHOR OF "CURRENCY AND CREDIT," "THE ECONOMIC PROBLEM"
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"ECONOMIC ASPECTS OF SOVEREIGNTY," ETC.

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PREFACE.

A VOLUME composed of a number of separate articles or essays may be compared with a federally constituted State, in contrast with a unitary volume, in which the chapters are as inseparably linked as the departments of a unitary State.

In the present work, one of the component essays has so outgrown the normal dimensions appropriate to a constituent of a federal volume that it has arrogated to itself the position of a Prussia.

Nevertheless, I have thought it best neither to segregate that essay in a separate volume nor to degrade the others from their autonomous position to that of chapters. I have retained the form of a collection of essays, all subject to the common sovereignty of a single theme, but each self-contained. Any one of them can be read independently of the others, and they can be taken in any order the reader may choose.

As the book is actually arranged, the subject is introduced by two essays describing recent events, one on *French Monetary Policy*, and the other on the Wall Street Speculation and the Crisis of 1929. These provide an approach by raising problems of central banking in practical form.

The third essay is entitled *Consumers' Income*

and Outlay. It explores in fuller detail a system of monetary analysis which I have already employed in other books, and which I have used extensively in the present volume. This detailed exposition is not essential to the understanding of what follows, for the meaning of the terms used has been indicated in more summary fashion where they are introduced. But it is offered to those readers who prefer a background of theoretical precision even for ideas which are intelligible without it.

The fourth essay is that which gives its name to the book. If the subject of central banking is classed as an art and not as a science, it is not for that reason any the less scientific. The art of central banking is practical in that it teaches how to use a power of influencing events. It is concerned, not merely with the relation of cause to effect, but with the relation of means to end.

But there is no less scope for systematic reasoning in the study of means than in the study of causes. The pursuit of wisdom is as scientific as the pursuit of truth.

Economic theory, in every branch, deals with practical affairs. Its subject is human welfare, and it is never entirely dissociated from the practical question of how human welfare is to be promoted. But it is a special characteristic of the art of central banking that it deals specifically with the task of an authority directly entrusted with the promotion of human welfare. Human welfare, human motives, human behaviour supply material so baffling and

elusive that many people are sceptical of the possibility of building a scientific edifice on so shifting a foundation. But however complex the material, and however imperfect the data, there is *always* an advantage to be gained from systematic thought. We may have to be satisfied with probabilities, but we can at any rate see to it that our probabilities make the most of the data we have.

Here what is commonly called theory, far from being academic, is simply the reading of past experience. The more intricate the subject, the more inadequate and indeed misleading is the empiricism which evolves practical precepts haphazard from the superficial uniformities of the past.

A central bank is entrusted with the regulation of credit, and under modern conditions the regulation of credit includes the regulation of money. Money is the nervous system of industry, and the due functioning of economic activity throughout its entire range is dependent upon the proper regulation of money.

I have started with a description of the evolution of the art of central banking through the practices of the Bank of England in the nineteenth century, and have then proceeded to a theoretical exposition of the art and so to an interpretation of recent events.

In the theoretical exposition, the fundamental principle is the power of the central bank, through its regulation of credit, to bring about what I have called a "release of cash" or an "absorption of cash," and thereby to enlarge or to compress the

consumers' income and outlay. It is through the exercise of that power that the central bank discharges its responsibility as the source of money.

One of the most important conclusions in regard to the art of central banking is that the power of a central bank ought to be used to prevent undue fluctuations in the price level, or, given an international gold standard, that the principal central banks ought to concert measures to stabilise the value of gold. The essay entitled *Money and Index-Numbers* is devoted to showing what meaning ought to be given to stability of the price level for the purposes of such measures. Like the essay on *Consumers' Income and Outlay*, it is in the nature of a technical digression, but it is essential to a complete treatment of our subject.

The sixth essay is a criticism of Mr. Keynes's *Treatise on Money*. Possibly those readers who have made a study of the *Treatise* may prefer to read the criticism before they turn to the essay on the *Art of Central Banking*. Otherwise they will be constantly wondering how the views expounded in the latter fit in with those of Mr. Keynes, how far they are incompatible, and how much common ground they have. Mr. Keynes emphasises the provisional character of the theories in his *Treatise*, and in what I have written I have kept this in mind, and I have endeavoured to make my criticisms constructive. I have also tried to give an adequate exposition of Mr. Keynes's own views on the matters dealt with, so that even those who are not acquainted with the *Treatise* may yet understand

the criticisms. But I ought to add for their enlightenment that they will find a great deal more in the *Treatise* besides the parts that I have dealt with.

The seventh essay is likewise concerned with Mr. Keynes's *Treatise*. It examines certain proposals which he made for modifying the technical practices of central banks.

The concluding essay shows how intimately the various remedies for unemployment, which come under discussion whenever business is depressed, are related to the characteristic instrument of central banking, the enlargement and compression of the consumers' income and outlay.

The last three essays were written for the Committee on Finance and Industry, presided over by Lord Macmillan. That on *Remedies for Unemployment* was printed with the Committee's Minutes of Evidence, and I have to thank the Controller of H.M. Stationery Office for consenting to its reproduction. It has not been materially altered, and it should therefore be read as applicable to the circumstances of the time, July, 1930, when it was written.

The essay on Mr. Keynes's *Treatise* has been considerably expanded, the passages on pp. 344-65 and 371-9 being practically all new, and taking the place of a much more summary treatment of some of the same topics. The rest of it, however, is practically unchanged.

The essay on *Money and Index-Numbers* was read to the Royal Statistical Society on the 17th

December, 1929, and was published in the Society's Journal. I have to thank the Council of the Society for agreeing to its being republished.

The essay on *French Monetary Policy* was read to the Manchester Statistical Society on the 14th January, 1931, and appeared in their Journal. It has been revised and brought up-to-date.

The essay on *Consumers' Income and Outlay* appeared in *The Manchester School* (Vol. II., No. 2), in October, 1931. It has been expanded by the insertion of some new passages, and by the addition of an algebraical note at the end.

The book contains my own personal views, and nothing in it is to be associated in any way with my official position in a Government Department. That applies to the three papers written for the Macmillan Committee as well as to the rest, for I was permitted to give evidence before that Committee in a purely personal capacity.

R. G. HAWTREY.

August, 1932.

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CHAPTER I.

FRENCH MONETARY POLICY.

THE WAR-TIME AND POST-WAR INFLATION.

My subject here is primarily the French monetary reforms of 1926-28, and the subsequent working of the system then established. But a brief survey of the events leading up to the preceding monetary crisis will be necessary.

In the first place the trouble originated in the distresses and mistakes of the war. France, like the other belligerents, lapsed deplorably from the path of sound finance. No new taxes were imposed for two years, and few then. There was not even a long-term loan issued till November, 1915, fifteen months after the outbreak of war. Up to that date the war had been financed exclusively by the creation of floating debt and by external borrowing, and a considerable part of the floating debt took the form of direct advances from the Bank of France. The Bank of France also had to discount the pre-moratorium bills at the outset.

The result was that inflation got well started and could never be stopped. By the end of 1918 40 milliards had been added to the floating debt (of which 17 milliards were advances from the Bank of France) and 32 milliards had been raised by external debt. First England and then America had assumed the burden of pegging the French exchange at a rate not too far from parity. To counteract the depreciation with which so vast a mass of inflation threatened the currency was a formidable task. The English exchange position was seriously threatened by it in the earlier part of the war, and the United States, after entering

the war, actually suspended the gold standard and saw the dollar at a heavy discount. It was with the withdrawal of American and English support for the pegging of the franc in March, 1919, that the French monetary crisis may be said to have begun. The year 1919 was one of drift. The expenditure was enormous. To the heavy military and demobilisation expenses remaining after the signature of peace was added the bewildering miscellany of emergency expenditure which none of the ex-belligerent Governments escaped, and for France a special burden in the beginning of the restoration of the devastated districts. The total expenditure of the year exceeded 50 milliards and the deficit exceeded 40. No loans were issued (except one of 4 milliards by the *Crédit National* for the devastated districts) and no less than 36 milliards was added to the floating debt.

It was at this period that the collapse of the currency began. Inflationary symptoms were ominous enough at the end of the war. The note issue exceeded 30 milliards, as compared with a pre-war monetary circulation which may be estimated at 11 milliards. But when the pegging of the exchanges was brought to an end in March, 1919, there cannot be said to have been any serious discredit of the currency. The discount on French francs in New York, which had been kept down to 5 per cent. during the last six months of the pegging system, rose to about 20 per cent. in June. But this represented no more than the market's opinion of the obviously artificial character of the pegged rate. At a time when the wealth value of gold in the world had fallen to half what it had been in 1913, the note circulation of 30 milliards was not very seriously redundant. But the inflationary finance of 1919 brought discredit and collapse. The note issue increased to 37 milliards and the exchange fell more than in proportion. The situation was not peculiar to France. The same thing was happening all over Europe. It took a little time for the foreign exchange markets to understand that the gold parities of the European currencies had no more than a historical significance, and that there was no presumption that anyone who bought or held a currency far below parity was

bound to make a gain equal to the difference in the long run.

The gradual discouragement of speculative holders showed itself in growing depreciation, which culminated in an exchange panic in February, 1920. The French franc was one of the more respectable currencies. It was quoted at about 35 per cent. of parity (this at a time when gold itself had no more than 45 per cent. of its pre-war purchasing power).

For most of Europe the panic of February, 1920, was a sudden pressure, quickly followed by some recovery. But in each country the course of events was affected by its own special circumstances. In France (as indeed in most of them) the governing condition was the state of the budget. And the budget was burdened with the gigantic cost of reconstruction of the devastated districts. In the claim made upon Germany in 1921 through the Reparation Commission this item accounted for 129½ milliards of francs out of the total of 218 milliards. The actual cost up to the 31st March, 1930, was 92 milliards in francs, equivalent to £1340,000,000 in gold.¹ In the years 1920-23 an annual outlay of 11½ to 17½ milliards was incurred on reconstruction.

This capital expenditure was met out of a special budget of "expenses recoverable under the Peace Treaty," along with the current provision for war pensions and the growing interest charge on the debt created from year to year to provide funds for this special budget.

In a sense the special budget of recoverable expenses was the cause of the collapse of the franc. To meet it from revenue would have been an unpatriotic act, an expression of doubt as to the recovery of reparations in full from Germany. It was consecrated as a deficit in principle. The result was not only to involve the country in continuous borrowing which the investment market was at times unable to absorb, but also to tie up the prospects of the French franc with the prospects of the German mark in the minds

¹ This calculation, based on the current value of the franc in gold year by year, has little significance owing to the fluctuations in the wealth value of gold.

of the public. Any event which threw doubt on Germany's capacity to pay reparations immediately had an adverse effect on the franc.

Now a currency unit which has become unstable is subject to speculative influences which tend to exaggerate its instability. An ill-founded speculative movement in a commodity market brings its own corrective, bulls overloaded with redundant supplies, or bears seeking to cover themselves in face of scarcity. But this is not true of the foreign exchange market. A bear movement, a "flight" from the currency, stimulates borrowing from the banks and creates a new supply of the currency; a bull movement, the restoration of "confidence," discourages borrowing and creates a currency shortage. In either case the speculation tends to bring about the fulfilment of the speculators' expectations, and to place the purchasing power of the currency unit on a new level.

By judicious management of credit the central bank can counteract these tendencies. It can stop a speculative depreciation of the currency by raising Bank rate or in the last resort by actually refusing to lend at all. It can stop a speculative appreciation by buying securities or foreign exchange in the open market and so creating an additional supply of currency.

But in the years 1920-26 the Bank of France was not in a position to exercise such management. Its balance-sheet was choked with advances to the Government, which could not be effectively reduced owing to the weakness of the budget position. Against any serious speculative depreciation of the franc the Bank was helpless, *unless* it was prepared to draw upon its gold reserve.

THE CRISES OF 1924-26.

After the exchange crisis of February, 1920, France participated in the general European recovery, though political complications (the Kapp Putsch and the French occupation of Frankfort) delayed the process for a few months. A real effort was made to place the budget on a sound footing. The Minister of Finance, M. François-

Marsal, secured the imposition of drastic new taxation (especially a turnover tax and a greatly increased income tax) which raised the revenue from 11·6 milliards in 1919 to 23·1 milliards in 1921. There still remained deficits of 38 milliards in 1920 and 28 milliards in 1921, but two big loans were issued in 1920, and bonds were also being issued by the *Crédit National*, the organisation which had been set up to finance reconstruction. Consequently the growth of the floating debt was comparatively slow.

Active measures of deflation were not possible, but for the time being a speculative fall of the franc no longer drove the Government to inflationary borrowing. The monetary circulation was kept down, and speculative depreciation brought its own corrective in an insufficiency of cash for the day-to-day needs of business. The collapse of 1920 had brought the franc down to a gold value of 5·8 cents (as measured by the exchange on New York). In the course of 1921 it rose, subject to some irregularity, and by the spring of 1922, the period of the Genoa Conference, it exceeded 9 cents. (Par was 19·295 cents.)

But meanwhile M. Poincaré had assumed office, and the conciliatory policy of M. Briand towards Germany was thrown to the winds. In July, 1922, the German request for a moratorium of reparation payments was refused, in January, 1923, came a formal accusation of default, in that the delivery of telegraph poles was behindhand, and the Ruhr was occupied. The collapse of the mark proceeded with ever-growing rapidity, and culminated in November, 1923. By that time it had come to be recognised that the Reparation question would have to be the subject of an agreed settlement, and the appointment of the Dawes Committee followed.

Meanwhile the franc had depreciated from 9 cents in May, 1922, to 5 cents in December, 1923. An ominous development was the failure of a loan issued by the *Crédit National* in January, 1924, which produced only 1636 millions in place of the 3 milliards required. The foreign exchange market became demoralised, and the franc fell in March, 1924, to $3\frac{1}{2}$ cents.

In 1923 there had been a budget deficit of 18 milliards, although the capital outlay on reconstruction had been only 11½ milliards. Issues of bonds (3 to 10 years) had kept down the floating debt, but if the market would not take the bonds an abyss of inflation would open out. Clearly further taxation was imperative, and M. Poincaré obtained the imposition of a *double décime*, an addition of 20 per cent. to nearly all the existing taxes.

At the same time he had recourse to external borrowing. In the then existing state of French finances, with the enormous debts to the British and American Governments unsettled, the issue of a Government loan abroad was impossible. But credits were raised in America of \$100,000,000 through Morgans, and in England of £4,000,000 through Lazards, by pledging a part of the gold reserve of the Bank of France.

The franc rapidly recovered, exceeding 6½ cents in April, 1924, to the great embarrassment of bear speculators particularly in some foreign centres. A rise of 80 per cent. in a few weeks was not by any means what was desired. The equilibrium of markets was upset. But the Bank of France had no power to moderate the rise by buying securities in the open market or by buying gold or foreign exchange at a premium.

The Reparation question had, for the time being, been settled by the Dawes Plan, and M. Poincaré's *double décime* promised to wipe out the budget deficit (except for the reconstruction expenditure, now reduced to something under 5 milliards a year), yet the market in francs had become more speculative and nervous than ever.

The trouble that ensued in the period from May, 1924, when M. Poincaré was defeated at the elections and made way for a Radical Government under M. Herriot, till July, 1926, when M. Poincaré returned to power at the head of a Government of National Union, representing both Right and Left, was partly political. In France, as in most democratic countries, the parties of the Left are sometimes distrusted by high finance. The violent oscillations of the franc in the spring of 1924 had disturbed con-

fidence, and fears of confiscatory taxation increased the nervousness.

There was no longer any important deficit on the ordinary budget, but the financial position was nevertheless precarious. The requirements of reconstruction, reduced as they were, were by no means negligible, but the real danger lay in the floating debt. Of the 60 milliards or so of National Defence notes and Treasury notes 7 or 8 milliards fell due every month. The immediate consequence of any distrust of the franc was a difficulty in renewing them. In the period from July, 1925, to May, 1926, fell a series of maturities of bonds, which, if the bondholders all exercised their option to claim repayment, would amount to as much as $27\frac{1}{2}$ milliards. That threatened a further enormous addition to the floating debt.

In April, 1925, M. Herriot's Government had to confess that the Bank of France had been evading the law which limited the advances to the State, and even surreptitiously exceeding the limit on the note issue. Their remedy for the situation was embodied in a proposal for a forced loan, which was incontinently rejected by the Senate.

The confusion of the ensuing fifteen months was in great degree attributable to the political deadlock between the Radical Chamber of Deputies and the Conservative Senate. No combination of men and measures could be found which would satisfy both. Successive Finance Ministers put forward proposals, some of which were partially adopted. M. Caillaux's internal loan of October, 1925, with exchange compensation (stabilised in terms of gold) was sound in principle, but was not issued on sufficiently attractive terms, and gave a disappointing yield. M. Loucheur carried an important measure of additional taxation, including an emergency addition to the income tax for one year.

In the spring of 1926 the franc showed signs of collapse. It fell to $3\frac{1}{2}$ cents in March and to 3 cents in June.

M. Caillaux came back to office and asked for dictatorial powers. He could not get his way, and one day in July, 1926, when M. Herriot tried to form a new Government

of the Left, a spasm of panic brought the franc down almost to 2 cents.

M. POINCARÉ'S MEASURES IN 1926.

These were the events that led up to M. Poincaré's Ministry of National Union, and to the monetary reforms of 1926 and 1928. The political difficulty was surmounted, in that a Government representing all parties commanded the confidence of both Chambers. The Senate had in effect gained the day, for radical measures were barred.

The urgent need was to deal with the floating debt. Indeed there appeared to be no other substantial source of trouble at all. With the additional taxation imposed by M. Loucheur in December, 1925, which was estimated to yield $4\frac{1}{2}$ milliards, the budget was balanced. German Reparation payments under the Dawes Plan would more than cover the cash requirements of reconstruction, and would soon suffice to cover the annuities under the British and American War Debt Settlements (which had not yet been ratified).

The maturities of 1925-26 had not been on so large a scale as had been feared. Of the total bonds of $27\frac{1}{2}$ milliards, the holders of 12 milliards exercised their option of claiming repayment. Half this liability had been met by M. Caillaux's stable value loan of 1925, and the floating debt had increased from 87 milliards at the beginning of 1925 to 93 milliards.

That increase by itself was not such as to cause a crisis, but extreme difficulty was being experienced in obtaining subscriptions to the National Defence Notes, and, when they fell short, the gap had to be filled by advances from the Bank of France—pure inflation.

Up to the end of 1924 it had been found possible to effect a gradual reduction in the legal maximum imposed on the advances by the Bank to the Treasury. The reduction had not reached the amount of 2 milliards a year prescribed in 1920, but the maximum had been brought down from 27 milliards in 1920 to 22 milliards at the end of 1924.

Since then the diminishing circulation of National Defence Notes had necessitated successive increases in the limit of advances up to $39\frac{1}{2}$ milliards, and simultaneously the maximum limit of the note issue of the Bank of France had been raised from 41 milliards to $58\frac{1}{2}$ milliards. The advances on the 22nd July, 1926, had reached 38,350 millions, and the note issue was 55 milliards. These visible evidences of inflation were the effect and at the same time the cause of distrust. What was needed was to break the vicious circle.

The mere formation of a Coalition Government was itself a step towards the restoration of confidence. The measures resorted to were drastic and wholesome, but were not marked by any striking originality or ingenuity. They were based substantially upon the recommendations of a Committee of experts presided over by M. Sergent, which had been appointed in May, 1926. The principal item was a further heavy addition to the tax burden, calculated in all to yield about 9 milliards in a full year. The management of the floating debt was entrusted to a *Caisse Autonome d'Amortissement*, an independent Sinking Fund Commission, which was created by the solemn procedure of a constitutional amendment, and endowed with certain assigned revenues (chiefly the tobacco monopoly and death duties) calculated to provide the interest together with about 2 milliards a year for reducing the capital.

If the new *Caisse* failed to dispose of National Defence Notes in sufficient amount or to raise the requisite funds to pay off maturities in any other way, the plan was bound to break down. The *Caisse* possessed no magical powers. The only substantial remedial measure was the additional taxation, a stronger dose of the same remedy that had been applied by M. François-Marsal in 1920, by M. Poincaré himself in 1924, and by M. Loucheur in 1925. But this time the dose was sufficient. The vicious circle, the self-infection of the disease, was broken.

The franc recovered immediately almost to 3 cents, and then after a pause rose in November, 1926, to $3\frac{1}{2}$ and early in December to 4 cents.

Along with the fiscal reforms, there was one change of a monetary character which was of great technical importance. The reaction after the exchange panic of March, 1924, had brought the franc to an inconveniently high value, at which it could not be maintained, and the decline that followed was a contributory cause of the collapse of confidence. The Sergent Committee recommended that the Bank of France should be empowered to buy gold and foreign exchange at a premium approximating to the market price, and that notes issued for this purpose should not be counted in calculating the maximum limit of the circulation. That meant that the Bank would be equipped to prevent the appreciation of the franc in terms of gold beyond a prescribed limit, because it could offer to sell an unlimited quantity of francs for gold and gold currencies at the prescribed price.

This recommendation was carried into effect by a law of 7th August, 1926. At first little advantage was taken of it. An offer to buy gold coin at a premium enticed a certain amount out of hoards. But the franc was allowed to appreciate till the beginning of December, 1926. At that time the situation was well in hand. The advances to the State had been reduced to 36·7 milliards, and the note issue to 53·5 milliards. The franc was quoted at about 4 cents. The moment was clearly approaching for a decision as to the future gold value of the franc.

DE FACTO STABILISATION.

The Sergent Committee had recommended three stages on the way to stabilisation : (1) a preliminary stage in which inflation would be stopped, but the franc would still fluctuate ; (2) a stage of stabilisation *de facto*, in which the Bank of France would maintain the franc at a fixed value by buying and selling gold and foreign exchange at prices corresponding to the gold points, but with no legal obligation to do so ; and (3) a final stage of stabilisation *de jure*.

As to the duration of the preliminary stage, they offered no criterion except that it should be as short as possible.

But in practice the duration was bound to depend upon the value to be chosen for the franc. The Committee did not themselves recommend a value, but said that it should lie between two limits, that corresponding to the index of the cost of living and that corresponding to the foreign exchange quotations. The foreign exchange quotations provide the most sensitive test of inflation; speculation tends to carry them beyond the level corresponding to the economic facts. The cost of living on the other hand is one of the *least* sensitive tests; it lags far behind. In July, 1926, the French index of cost of living was approaching 500 (par being July, 1914). At the same time the American index was 166 and the English 170. If we relied on this comparison as the basis of purchasing power parity, we should stabilise the franc at one-third of its former gold value, 6.4 cents., or 75 francs to £1. Actually in July, 1926, the exchange averaged about $2\frac{1}{2}$ cents or nearly 200 to £1.

By December, 1926, the two limits had come much closer together. The cost of living index had risen to 545, while the exchange quotation had risen to 4 cents, or 122 to £1.

What is really required for such a comparison is not so much the cost of living as the "internal price level." Unfortunately the data are never available for an index of the internal price level. The index numbers of the cost of living are defective, both as excluding a wide variety of items which contribute to the internal price level, and also as including items which belong partly to the external price level. And in 1926 the index was abnormally affected by rent control. Retailers' profits are an important constituent of the internal price level, but retail prices do not give a direct measure of them.

In practice the best approximation to a measure of the internal price level in any country is to be found in an index of *wages*. A great part of the prices to be measured are prices of services which can only be utilised in the place where they are rendered. And when we seek a measure of the internal price level for purposes of monetary policy, an index of wages is especially appropriate, because the chief

cause of friction at times of monetary instability is the resistance of wages to change.

As it happens, the index of wages in France in 1926 was not very different from the index of cost of living. For Paris it was 510 and for other towns 584 (100 being 1911). Purchasing power parity with England on this basis would have indicated about 80 francs to a pound.

It is not necessarily to be inferred that the franc ought to have been raised to that level. The rise from 200 to 120 was in any case a strain on the mercantile world. And a further rise would also have threatened the equilibrium of the budget. An internal debt of 300 milliards at 120 is equal to £2,500,000,000 and at 80 to £3,750,000,000. But considering how recent and rapid the fall of the franc had been, and how far the French economic system was from adapting itself to the new level of values, there is something to be said for the view that a somewhat higher value, say 100 to £1, might have been selected.

However that may be, *de facto* stabilisation was initiated in December, 1926. The Bank of France proceeded to prevent the franc from rising above the level of about 4 cents, or 122 to £1, by buying sterling and dollar exchange from all-comers at that price.

Provided the existing tendency towards appreciation continued, the purchases of foreign exchange would maintain stability. And the purchases of foreign exchange, if considerable, would provide a reserve against any renewed tendency towards depreciation.

THE FLOATING DEBT.

But the French Government were not yet satisfied with the position. The reduction of the floating debt had hardly begun. The advances from the Bank of France to the Government at the end of December, 1926, were 36 milliards, and the note issue 52.9 milliards. Comparison with the beginning of 1925, when advances had been limited to 22 milliards and the note issue to 41 milliards, suggested that the menace of inflation still remained. For the moment the

mood of the public favoured an appreciating franc, and the vast floating debt was well held. But a renewed flight from the franc might destroy the precarious equilibrium. And it was to be feared that the mere fact that the equilibrium was precarious would be enough sooner or later to start the flight.

Accordingly *de facto* stabilisation was accompanied by a series of measures designed to eliminate all trace of inflationary finance.

The *Caisse Autonome* started operations on the 1st October, 1926, taking over responsibility for the 48,168 millions of National Defence Notes then outstanding, and issued a loan of 3 milliards charged on one of its assigned revenues, the tobacco monopoly, to provide a working balance. In December the interest on one-month notes was reduced, and then the sale of one-month notes was stopped altogether. Early in the New Year the maturities below a year (3 and 6 months) were withdrawn from sale, and two-year notes were introduced. Rates of interest were also reduced, and yet in April, 1927, the National Defence Notes outstanding had grown to 50,586 millions. All the endeavours of the *Caisse* to reduce the notes had failed to prevent an increase of 2 milliards in six months, though the elimination of the shorter maturities had greatly diminished the amount falling due at any one time.

The explanation of the recalcitrant behaviour of the floating debt is, I think, simple. At the time of the formation of M. Poincaré's Government at the end of July, 1926, the Bank of France had raised Bank rate from 6 per cent. to $7\frac{1}{2}$. The market rate of discount rose from 6 per cent. (average for July) to 7 (average for August) and $7\frac{1}{4}$ (average for October). Had inflation continued, these rates might have had no deterrent effect, but coming as they did at a psychological turning-point, they caused a shrinkage in the amount of commercial bills. The bills discounted at the Bank of France fell from 7864 millions in August, 1926, to 3604 millions in December. The market was suffering from a scarcity of bills, and Bank rate became ineffective. It was reduced to $6\frac{1}{2}$ per cent. in December, 1926, and

5½ in February, 1927, but the market rate remained far below it. The efforts made by the *Caisse Autonome* to diminish the demand for National Defence Notes were baffled by this scarcity of bills. In January, 1927, when the commercial banks were driven to buy three and six months National Defence Notes, yielding 4 and 4½ per cent., to fill their portfolios, a 6½ per cent. Bank rate could not be kept effective. The market rate fell below 5 per cent. When the three and six months notes were withdrawn in February, the scarcity was intensified. Though 5 per cent. interest was allowed on the twelve months notes, they were only eligible for rediscount with the Bank of France within three months of maturity, and the scarcity of short bills became greater than ever. In June, 1927, when even the twelve months notes ceased to be offered, and the only National Defence Notes remaining on sale were two-year 4½ per cents., the market rate of discount fell almost to 2 per cent., Bank rate being 5. Discounts at the Bank of France fell below 2 milliards.

Meanwhile steps were being taken to deal with the other portion of the Floating Debt, the advances from the Bank of France. Thanks to the increased taxation the budget of 1926 closed with a small surplus, and that of 1927 provided a substantial one over and above that assigned to the *Caisse Autonome*. But reducing the advances from budget surpluses would be a slow process, and recourse was had to a series of loans. These were primarily conversion loans, intended to deal with various bond issues maturing in the near future, but the two 6 per cent. loans of April and June, 1927, included in their conversions 8538 millions of National Defence Notes, and the second of them raised 3 milliards of cash.

In so far as the National Defence Notes were replaced by the issue of new notes from the *Caisse Autonome*, they were the equivalent of cash.

Meanwhile the increased revenue was flowing in. The ultimate surplus for 1927 was only 740 millions, but that only means that this was the balance disclosed when all the expenditure in respect of the year was brought to account. The big increase in revenue which brought up the yield from

31,178 millions in 1925 to 43,925 millions, *plus* 6150 millions for the *Caisse Autonome*, or 50,075 millions in all in 1927, gave rise to plans for much needed expenditure (allowances for increased cost of living, etc.) which did not immediately take effect. At first there was a large increase in available cash.

Another resource was found in an arrangement by which the Treasury received deposits from the commercial banks at low rates of interest. The banks, embarrassed by the scarcity of bills, were glad to get $2\frac{1}{2}$ or 2 per cent. or ultimately even 1 per cent. on funds that would otherwise be entirely idle. These deposits had amounted to 2629 millions at the end of December, 1926, and gradually rose to 10,882 millions on the 30th June, 1927, and though they then began to diminish were still 6349 millions at the end of August.

The surplus funds acquired by the Treasury were applied automatically to reduce the advances from the Bank of France, which had consequently fallen from 36 milliards at the end of December, 1926, to 25 milliards at the end of August, 1927. But this was not all. For the *Caisse Autonome* still failed in its efforts to reduce the outstanding National Defence Notes. However unattractive the rate of interest and the maturity were made, people still insisted on having them in quantities almost undiminished. The amount outstanding at the end of August, 1927, after the issue of the two 6 per cent. loans to which I have referred, was still 44 milliards, or only 4 milliards below the total when the *Caisse Autonome* had begun operations 11 months before. The money that the *Caisse* had raised or received for the purpose of reducing the floating debt had simply been accumulated in a vast idle balance at the Bank of France. The total of deposits in which this sum was included had grown by 7 milliards. This idle balance had just the same effect on the currency as a repayment of advances of the same amount. Only instead of the assets of the Bank of France being reduced by 7 milliards, the corresponding liabilities were immobilised and excluded from the available monetary supply.

THE NEED FOR MORE CURRENCY, 1927-28.

Here was deflationary finance on a great scale. A sum of 18 milliards (£144,000,000) had been applied to diminishing the currency. Yet the corresponding decrease in the note issue did not materialise. It stood at 52.7 milliards, almost exactly the same figure as in the preceding December.

In fact the expectation that deflationary measures would bring about a reduction in the note issue was based on a misconception. Given a franc stabilised at 2d. the note issue would settle itself according to the requirements of the public for cash balances. To estimate those requirements, we can appeal to pre-war experience, which showed that a total monetary circulation (paper, gold and silver) of 11 milliards of pre-war francs was needed. The new franc was equivalent to about one-fifth as much gold as the old, but its purchasing power in terms of wholesale prices was less than one-sixth. If the same purchasing power in terms of wholesale prices was needed, the total would be not 55 milliards but about 70 milliards.

But, owing to increased productivity throughout the world the wholesale price level showed a smaller proportionate rise since 1914 in gold standard countries than the wage level. In 1927 in England the wholesale index was 141.6, while the wage index was about 170 to 175. Apart therefore from any change in the world value of gold, it might be expected that the wage index in France would rise to, say, 20 per cent. above the wholesale price index, or to something between 750 and 800. That calculation would point to an ultimate monetary circulation in excess of 80 milliards. Allowance would also have to be made for increased area and population and economic development generally. On the other hand, any growth in the use of cheques and other methods of economising currency would lead to a relative diminution of currency, and a compensating growth in deposits. This last factor, though not absent, has up to now played only a subsidiary part.

It is clear therefore that the circulation of 53 milliards, at the outset of the stage of *de facto* stabilisation, far from

signifying a continuance of inflation, was utterly inadequate for the needs of the country.

The deflationary measures adopted by the Government intensified the scarcity of currency. If the Government raised resources by tax and loan, and applied them to extinguish advances that formed part of the assets of the Bank of France, the immediate consequence was to extinguish an equal amount of the Bank's liabilities, i.e. of the note issue.

People found themselves short of cash, and could only make good the shortage either by saving or by borrowing. Borrowing would not produce additional notes unless it were borrowing from the Bank of France. Had the money market been working normally, the gap in the assets of the Bank of France would have been filled partly at any rate by the discount of bills. But there was an extreme shortage of bills, particularly of the kind eligible for discount by the Bank of France. These bills arise only out of certain transactions, and the supply of them cannot be easily increased, particularly at a time when business has been slowed down by deflation.

As people could not supply themselves with the necessary cash balances by borrowing, they proceeded to do so by saving. Instead of spending or investing money they left it in balances. The demand for goods was thereby restricted. That is how the depression generally associated with deflation or a "stabilisation crisis" is brought about. It had been feared in France, and the Sergent Commission associated its recommendations with a warning on the subject.

France escaped lightly. The level of wages had lagged so far behind the progress of inflation, that the restriction of demand caused comparatively little unemployment. The drop in the index of production from 99.2 in 1926 to 86.6 in 1927, followed by a recovery to 100 in 1928 is significant, though I think these figures considerably exaggerate the real fluctuations in economic activity.

On the other hand, the compression of spending power due to the scarcity of currency had a most potent effect on

the balance of payments. People spent less on importable and exportable goods and on external investment. The result was a favourable balance of payments. With a paper franc and foreign exchange free to vary without limit, the result would have been a favourable exchange, a rise in the value of the franc. But the franc was pegged at 2d. The Bank of France had undertaken to supply an unlimited quantity of franc currency at that price. As fast as the Government created a scarcity of francs, the public made good the deficiency by buying currency from the Bank of France and paying for it with foreign exchange, the proceeds of the favourable balance of payments.

For a time the Government succeeded in preventing any increase in the note issue. But the gap of 18 milliards that it had made was filled by 18 milliards of foreign exchange.

After August, 1927, there came a change of tactics. The accumulation of resources by the Government was suspended, but a new plan was devised for keeping down the note issue. The Bank of France continued to buy exchange at the pegged price, but it endeavoured to counteract the effect on the note issue by buying *forward* exchange. In effect when the Bank bought sterling one month forward it was lending sterling and borrowing the equivalent in francs for one month. It was satisfying the market's demand for francs in exchange for sterling, but without adding to the immediate supply of francs. When the forward transactions began to mature, and the time came for the Bank to accept delivery of the sterling, it could lend the sterling again by entering into a fresh forward transaction or a renewal.

These forward transactions presently amounted to a total of several milliards. But they failed to offset the spot transactions. In January, 1928, the note issue reached 58 milliards. The advances to the Treasury remained stationary, but in the early months of 1928 the sinking fund balance of the *Caisse Autonome* was drawn upon for the redemption of debt, and in April the note issue touched 60 milliards.

A new loan was issued in May, 1928, producing, besides

bond conversions, 13½ milliards for dealing with the floating debt. Advances from the Bank of France to the Government were brought down from 23·8 milliards in April to 17·9 milliards in June, 1928, and there occurred a renewed inflow of foreign exchange. After allowing for the depletion of the sinking fund balance, the financial operations of the Government since August, 1927, had not involved any net reduction of the currency. On the other hand, various hidden funds and balances had been accumulated. The Government had been able to pay off the residue of the wartime loan from the Bank of England amounting to £33,000,000 in April, 1927, thereby releasing £18,000,000 of gold belonging to the Bank of France which had been pledged as part security for the loan. A fund of foreign exchange was also being built up in the hands of the Government with a view to the payment of \$407,000,000 to the United States which would become due in 1929 unless an agreement for funding the war debt was ratified before then. By June, 1928, this fund amounted to 3926 millions of francs (\$154,000,000).

Thus the repayments of the debt to the Bank of France only used up a part of the resources of the Treasury. The moment had clearly come for *de jure* stabilisation. There could be no question of disturbing materially the parity to which the country had become accustomed for eighteen months, and there could be no doubt of the adequacy of the resources of the Bank of France for maintaining that parity.

THE NEW MONETARY LAW, JUNE, 1928.

The monetary law of June, 1928, equated the franc to 65·5 milligrammes of gold, 900 fine. It was ·20305 of the pre-war gold franc, the parity with London being 124·21 francs to £1, and with New York 3·9179 cents to a franc.

A gold bullion standard was established, the Bank of France not being obliged to redeem its notes in gold coin, but only to sell gold bullion at the price equivalent to the new parity, or 16,963·5 francs per fine kilo.

The proportional reserve system was adopted. The new law required the Bank to hold a gold reserve not less than 35 per cent. of its demand liabilities (not of notes alone).

The reserve was to be composed exclusively of gold ; foreign exchange was not to be counted. And the law of 7th August, 1926, which empowered the Bank to buy foreign exchange, was repealed.

The gold reserve held in 1926 had continued to be valued in pre-war francs. Inclusive of the 463 millions (£18,300,000) released by the payment of the debt to the Bank of England, this gold amounted to 4177 millions (£165,600,000).¹ Its valuation was raised to 20,412 millions. Allowance being made for revaluing some other gold assets, and the Bank's silver coin, a total balance-sheet gain of 16,431 millions was disclosed. This was credited to the Treasury against the outstanding advances.

The opportunity was taken to place the advances on a permanent footing. Besides the 17,900 millions of advances to the State so designated in the balance-sheet, provision had to be made (1) for the debt due by the Treasury for gold withdrawn from the Bank during the war and handed over to England for the purpose of maintaining the American exchange ; (2) for certain bills discounted by the Bank for Russia during the war, amounting to :—

Advances	17,900 millions.
Gold debt	1,350 „
Russian bills	5,930 „
	<hr/>
	25,180 „

Against this had to be set :—

Revaluation of gold, etc. .	16,431 „
Treasury credit balance .	553 „
Other funds of the Treasury .	4,346 „
	<hr/>
	21,330 „

¹ That is the amount of gold carried in the balance-sheet at pre-war value as stated in the Bank of France report for 1928. The items actually shown in the balance-sheet for 21st June, 1928, amounted only to 4141 millions.

The net debt was thus reduced to 3850 millions. Nevertheless separate provision was made for the Russian bills, the *Caisse Autonome* being made responsible for them. And it was decided that there should be a permanent statutory advance of 3 milliards to the State. The result was that the Treasury acquired a *credit* balance of 5080 millions. Along with the sinking fund balance of 1934 millions the public deposits at the Bank of France thus amounted to 7 milliards, or £56,000,000.

The Sergent Commission had taken note of the prospective gain to the Treasury from the revaluation of the gold reserve, and they had recommended an eventual reduction of the balance of the advances, the "residue of inflation," till there should be left only a permanent advance sufficient to provide the Treasury with a working balance. But they had not contemplated so precipitate a transformation. They had intended the repayment to proceed slowly, so as to permit the gradual replacement of the Treasury debt by commercial bills.

The new monetary legislation was duly passed in June, 1928, and the first balance-sheet of the Bank of France under the new system related to the 25th of that month. For the first time particulars of the enormous transactions of the past eighteen months were disclosed. The amount of foreign exchange held was 26,529 millions, in addition to foreign exchange bought forward to the amount of 9778 millions. The gold reserve was 28,935 millions, showing that £68,000,000 of gold had been added to that held in 1926, besides the £18,300,000 released from pledge. Gold to the amount of £13,000,000 had been collected from internal circulation and bought by the Bank of France, so that the gold acquired from abroad was, £55,000,000, or 7 milliards.

THE "REPATRIATION" OF FRENCH CAPITAL.

In the middle of December, 1926, when *de facto* stabilisation began, the note issue was 52.5 milliards and deposits 5.3 milliards, making demand liabilities 57.8 milliards in

all. Commercial discounts and advances were 5·8 milliards, so that the demand liabilities to be covered otherwise than by commercial discounts and advances were 52 milliards. Towards covering these, advances to the Treasury provided 42 milliards. In June, 1928, the note issue had grown to 58·9 milliards, private deposits were 5·7 milliards and public deposits 7 milliards, making 71·6 milliards in all, of which 4·8 milliards were covered by commercial discounts and advances, and 66·8 milliards remained to be covered otherwise. Advances had shrunk to 8·9 milliards, so that the liabilities to be covered mainly by gold and foreign exchange had expanded from 10 milliards to 57·9 milliards. Revaluation had increased the old gold reserve by 16·4 milliards, but there was still a gap of 31·5 milliards.

Nothing could be more straightforward than the explanation of the vast influx of gold and foreign exchange that occurred. The vacuum that the Government was making in the currency by paying off advances had to be filled, and gold and foreign exchange supplied the only means of filling it.

Nevertheless a variety of other explanations were put forward. Two favourite explanations were current, and these were alluded to in the annual report of the Bank of France for 1928. The influx of foreign exchange "was the result not merely of the repatriation of French capital invested abroad, but as well of a vigorous speculative movement of foreign origin, which became day by day more difficult to check."

The "repatriation of French capital" has been very generally taken for granted as one of the principal causes at work. But I think there has been much misunderstanding on the subject.

Extreme distrust of a currency is apt to be accompanied by two forms of panic, commonly described as a "flight from the currency" and a "flight of capital." The flight from the currency takes the form of a reluctance to hold balances, whether of money or of bank deposits. People hasten to pay away their money for any "real" values, that is to say for those, such as commodities, ordinary

shares, houses, or foreign currencies, which do not depend for their value upon the distrusted monetary unit. With an inconvertible paper standard these efforts to get rid of money cannot diminish the total amount of money, for that is only diminished through cancellation by the issuing authorities. But the prices of the real values are raised by the pressure to buy them, so that the purchasing power of the monetary unit shrinks, and a given stock of currency represents a diminishing equivalent in wealth or in gold. Thus at the height of the panic in July, 1926, the gold value of the French note issue shrank to £220,000,000 as compared with £450,000,000 at the end of 1924 and £600,000,000 in 1922. In December, 1926, it had recovered to £425,000,000.

A flight of capital is the same kind of distrust applied to *investments* fixed in terms of the currency unit, instead of to money and bank balances. People seized with panic will hasten to sell such investments, and it is very commonly inferred that there must result an enormous mass of such sales, and the reinvestment of the proceeds in real values, e.g. in foreign investments or simply in foreign currencies.

But this is a mistake. To every sale there must correspond a purchase. In the first instance the investments are bought by professional dealers on the Stock Exchange. But of course the dealers are not willing to be overloaded with unpopular securities. They very quickly mark down prices, and quote them lower and lower till they can check the sales, and attract purchasers. Thus if the sales are large, so are the purchases, and there is a flight of capital *to* the franc, just equal to the flight *from* the franc. The distrust makes itself manifest not in an excess of sales, but in a *fall of prices*. For example, the 5 per cent. *rentes* of 1915-16 (one of the principal French War Loans) fell at the time of the panic on one day of July, 1926, to 42.10, and even by the 1st January, 1927, had only risen to 63.80. In 1929 they rose above par. Other fixed interest securities behaved very similarly.

In one way this fall of prices does bring about what is equivalent to a flight of capital; it prevents new issues of

fixed interest-bearing securities. The following table (from the *Statistique Générale*) gives particulars of French Capital issues for the years 1922-28:—

FRENCH CAPITAL ISSUES.

(MILLIONS OF FRANCS.)

	Shares.	Debentures.		Public Authorities.			Total Fixed Interest.
		Railway.	Others.	Govt. ¹	Crédit National.	Local.	
1922	1345	2114	2599	8,188	10,328	175	23,404
1923	2325	2193	2678	16,067	5,694	493	27,125
1924	3895	2434	1244	4,912	1,636	50	10,276
1925	2654	1426	1033	5,934	—	570	8,963
1926	2884	2292	1883	4,307	39	1350	9,871
1927	4026	3847	2939	12,680	429	1032	20,927
1928	6514	3076	4015	9,545	613	836	18,085

The shrinkage of fixed-interest issues in the years of collapse 1924-26 is most striking, all the more so if we keep in mind the falling value of the franc. As to the operations of the Government in those years, it may be recalled that the loan of 1924 was issued to yield $8\frac{1}{2}$ per cent., that of 1925 was not really a fixed-interest franc loan at all, since it was stabilised in terms of gold, and the greater part of the total for 1926 was composed of a loan of the *Caisse Autonome*, the interest on which was not fixed, but varied with the price of tobacco charged by the tobacco monopoly.

Thus there was a flight of capital in 1924-26 in the sense that there was little money placed in *new* franc securities. And there was a repatriation of capital in 1927 and 1928 in that the market subscribed large issues of such securities. But this repatriation of capital was mainly the result of the big Government loans. The Government borrowed paper francs from the public and cancelled them by repaying advances to the Bank of France. The public, being short of paper francs, economised on imports and thereby acquired sufficient foreign exchange to extract a fresh supply of currency from the Bank. It may be supposed that they not

¹ Excluding Conversions.

only economised on visible imports, but also restricted external investment or sold foreign securities, so that in effect the Government was raising its consolidation loans in part from foreign investment markets.

Thus it is not altogether false to say that a flight of capital and a subsequent repatriation of capital occurred. But these events only contributed to the influx of foreign exchange in that they were incidental to the shortage of currency.

THE WORLD CREDIT SITUATION.

Speculation was the other favourite explanation. The purchase of francs by speculators may have occurred in the early days of *de facto* stabilisation. But speculators who are almost completely secured both against loss and against gain must soon get tired of paying a recurrent commission for the privilege of hoping that some unforeseen excitement may turn up.

When the annual report of the Bank of France for 1928 alluded to "a vigorous speculative movement of foreign origin," the context shows that the phrase was not to be interpreted so naively. In the preceding report the Bank had explained the conversion of a considerable part of its stock of foreign exchange into gold in 1927 as being intended "partly to restrain foreign speculation and to protect the French market against an unregulated inflow of foreign capital such as might have been provoked by the abuse of credit facilities resulting from the accumulation in foreign markets of our own balances" (Bank of France Report for 1927, *Federal Reserve Bulletin*, March, 1928, p. 190). The Report for 1928 returned to the subject. The Bank had feared that by extending its holdings of bills in foreign markets it "was maintaining in these markets an artificial monetary ease, which permitted them to continue their purchases of francs indefinitely without experiencing any corresponding reduction in their available funds. It was, in fact, working to facilitate the initiation of a world-wide credit inflation, which only actual purchases of gold could arrest or keep within bounds" (*Federal Reserve Bulletin*, March, 1929, p. 202).

And there can, I think, be no doubt that purchases of foreign exchange on so great a scale tended to have an inflationary effect in the rest of the world. When *de facto* stabilisation began at the end of 1926, the world price level had been falling for two years. To the long-drawn-out trade depression in England had been added an acute depression in Germany, and even in the United States the great expansion in production had been interrupted.

In the early months of 1927 a relief of the tension became apparent. In the London money market a demand for bills from "the Continent" lowered the market rate of discount and made Bank rate ineffective, and in April, 1927, Bank rate was reduced from 5 per cent. to $4\frac{1}{2}$. For the time being the fall in the world price level stopped. This was not wholly due to the credit relaxation arising from the French purchases of bills. The American Federal Reserve system adopted a policy of cheap money and liberal purchases of securities. And it was at this moment that the Bank of France initiated the policy of buying gold in place of foreign exchange, with the avowed object of checking the tendency to "inflation" in other countries. The amount of foreign exchange purchased was still large, but the expansive effect was to a great extent counteracted, by renewed credit restriction in England, where, though Bank rate was not raised again, the rate of $4\frac{1}{2}$ per cent. (itself very high for a time of depression) was made effective.

In the course of 1927 and 1928 American industry, favoured by credit relaxation, and German industry, favoured by renewed imports of capital on a lavish scale, recovered a high degree of activity. But the incidental result was a heavy export of gold from America, exceeding £100,000,000, of which the Bank of France acquired about £60,000,000 and the Bank of England £23,000,000.

This loss of gold was a contributory cause, along with the Stock Market Speculation, of the abandonment of the policy of easy credit by the United States in the summer of 1928. The New York rediscount rate was raised to 5 per cent., the highest since 1921, and the Federal Reserve Banks sold securities in the market. This occurred almost

contemporaneously with the new French monetary law of June, 1928.

From then till the end of 1928 the French absorption of gold was almost suspended. It is true that the gold held rose from 28,935 millions to 31,977 millions. But of the addition 2200 millions represented gold coin collected from French hoards, so that the gold acquired from abroad was little more than 800 millions of francs (£6,500,000).

During this period the forward exchange that had been held by the Bank gradually fell due, and by the end of 1928 the foreign exchange in hand had grown from 26,529 millions to 32,641 millions. About 6000 millions of the 9778 millions of forward exchange had thus been retained. Since the Government's balance of foreign exchange had been increased by 3901 millions of francs to 7827 millions, none had really been parted with:

And at last cheap money in Paris (combined with dear money in London and New York) made an impression on the volume of bills. The French Bank rate had come down to $3\frac{1}{2}$ per cent. The bills and National Defence Notes held by the three big commercial banks having declined from 15,030 millions at the beginning of 1927 to a minimum of 11,127 millions in June, 1927, had risen to 19,254 millions in June, 1928, and 20,482 millions in December, 1928. Discounts and advances at the Bank of France rose from 4819 millions in June, 1928, to 7974 millions in December.

Thus the assets of the Bank had risen in six months by 12 milliards. What then had happened to the liabilities? The note issue had continued to expand and had reached 63,916 millions. This was an increase of 5 milliards, but with an increase of $1\frac{1}{4}$ milliards in private deposits, it still left more than 5 milliards to be accounted for.

There had in fact been an increase of $5\frac{1}{4}$ milliards in public deposits. There were no longer any advances from the Bank of France to repay, and the public appetite for National Defence Notes still defeated the efforts of the *Caisse Autonome* to use up surplus funds in redemptions. The consequence was that public balances had reached the enormous total of 12,214 millions or very nearly £100,000,000.

ABSORPTION OF GOLD, JANUARY, 1929, TO MAY, 1931.

The subsequent developments will be made clear by the following table which gives (in millions of francs) the principal items from the Bank of France return at certain selected dates :—

DEMAND LIABILITIES.

	Note Issue.	Private Deposits.	Total.	Public Deposits.	Total.
1928—					
25th June . .	58,772	5,744	64,516	7,013	71,529
28th December .	63,916	7,018	70,934	12,214	83,148
1929—					
3rd May . .	63,828	7,097	70,925	11,287	82,212
12th July . .	64,554	5,844	70,398	12,019	82,417
13th September .	65,470	5,134	70,604	14,048	84,652
1930—					
17th January .	68,688	7,355	76,043	10,915	86,958
2nd May . .	72,373	6,775	79,148	5,594	84,742
26th December .	76,436	11,698	88,134	12,624	100,758
1931—					
6th February .	77,772	10,251	88,023	14,180	102,203
29th May . .	78,185	12,669	90,854	9,940	100,794

ASSETS.

	Gold.	Foreign Exchange.	Total.	Commer- cial Discounts and Advances.	Ad- vances to State, etc.	Grand Total.
1928—						
25th June . .	28,935	26,529	55,464	4,819	9,915	70,198
28th December .	31,977	32,641	64,618	7,974	9,862	82,454
1929—						
3rd May . .	36,462	26,509	62,971	8,825	9,730	81,526
12th July . .	36,661	25,807	62,468	9,965	9,523	81,956
13th September .	39,031	25,968	64,999	10,277	8,883	84,159
1930—						
17th January .	42,737	25,765	68,502	9,098	9,043	86,643
2nd May . .	42,350	25,634	67,984	7,733	8,882	84,598
26th December .	53,578	26,147	79,725	11,286	9,086	100,097
1931—						
6th February .	55,632	26,278	81,910	10,240	9,043	101,193
29th May . .	55,634	26,135	81,769	8,969	9,109	99,847

FRENCH MONETARY POLICY

The first thing to notice is the big reduction in the for exchange held in the early months of 1929. The weight of the increase of 6 milliards that had occurred in the second half of 1928 was got rid of. Discounts were still growing. Public Deposits fell by nearly a milliard and the note issue for the time being ceased to expand, but still $4\frac{1}{2}$ milliards of gold were required to fill the gap. There followed a few months in which changes were slight, and no gold was imported. But between the 12th July and the 12th September, 1929, an increase of 2 milliards in public deposits and a renewed increase in the note issue involved the importation of 2370 millions of gold. And thereafter the persistent growth of the note issue involved an equivalent importation of gold, till the return for 29th May 1931, showed a total increase in the gold holding of 16,699 millions since September, 1929, and of 26,699 millions since June, 1928.

There was a pause in the increase between January and May, 1930, but that was only because the Government balances were being drawn upon for redemption of debt. Soon afterwards balances began to accumulate again and grew till in February, 1931, they were as big as ever. Once more there followed the seasonal reduction in Government balances, and a pause in the inflow of gold, which lasted till the end of May, 1931, the eve of the German crisis.

Over the whole period from June, 1928, to May, 1931, the Demand Liabilities increased by 29,265 millions, against which commercial discounts and advances increased 4150 millions. There was a decrease of 806 millions in advances to the State, under which I have included besides the permanent advances of 3.2 milliards the replacing of the old Russian bills (now reduced to 5082 millions) and also the old silver coin revalued at 785 millions in 1928 and since withdrawn at that value and replaced by silver token coin amounting in May, 1931, to 827 millions. Thus the 26.7 milliards of gold were required to cover a net increase of 25.9 milliards of demand liabilities.

THE POWERS OF THE BANK OF FRANCE.

The outstanding characteristic of the Bank of France returns from June, 1928, to May, 1931, is that the increased demand liabilities were covered (apart from the extension of commercial discounts and advances) exclusively by gold. In the preceding two years the Bank had acquired $26\frac{1}{2}$ milliards of foreign exchange and $8\frac{1}{2}$ milliards of gold. In the subsequent three years it made no net addition to its foreign exchange and absorbed 26.7 milliards of gold.

The Bank no longer explained its purchases of gold as a measure designed to check a "world-wide credit inflation." The Report for 1929 was emphatic as to the purely passive part played by it. "We were obliged, in fulfilment of our obligation to regulate the currency, to accept all gold of foreign origin which was offered to us over the counter for francs, but we did not at any time intervene in the exchange market to accelerate the pace of these gold imports. The bank has opposed no obstacle whatever to the free play of the money market under the regime of the gold standard."

The change that had occurred was the repeal of the Law of 7th August, 1926, which empowered the Bank to buy foreign exchange. I must confess that the precise legal effect of the repeal is somewhat obscure. It seems clear that apart from that law the Bank had no power to buy foreign bills which do not conform to its statutory requirement of at least two French signatures. (The Bank has always discounted and held French *export* bills on foreign centres, but these have never amounted to a considerable sum and they are not included in the totals of foreign exchange as usually quoted.)

But has the Bank power to buy foreign *currency*? One would be inclined to suppose not. "Currency" in the foreign exchange market does not mean packets of legal tender paper, it means bank deposits, and legally a bank deposit is nothing but an unsecured debt due from a bank. If the power of the Bank to lend has been hedged round with carefully devised limitations as to signatures and collateral,

how can it claim the right to make an unsecured loan to an English or American bank?

On the other hand, the power conferred by the law of 7th August, 1926, has undoubtedly been interpreted as having so far survived the repeal as to permit the Bank to *hold* the foreign exchange that it had legitimately acquired. And the right to hold it includes the right to replace bills falling due.

As the figures quoted above show, the Bank did not retain the *forward* exchange which it had contracted for before June, 1928. Possibly its power to do so was regarded as open to doubt.

The upshot is that owing presumably to this change in the law the Bank kept its holding of foreign exchange at an approximately fixed figure, the variations being only such as might be caused by accruing interest and casual exchange profits or losses.

But this limitation is not enough by itself to explain the purely passive attitude of the Bank towards the inflow of gold. Other central banks are able to exclude gold by buying securities in the market. The "open market" policy of the Federal Reserve Banks has been a conspicuous feature of their regulation of credit during the past ten years.

But the Bank of France is not permitted by its statutes to buy securities. It is precluded from resorting to an open market policy. This is no new thing. Before the war the commercial discounts and advances were the only elastic element in the French currency. Any increase in monetary requirements that they did not cover had to be supplied by imports of gold. Any violent fluctuation in the circulation at that time would have produced correspondingly large movements of gold. But from the restoration of specie payments in 1878 to the outbreak of war in 1914 the expansion of the French currency was gradual enough to avoid any exaggerated movements.

In May, 1931, the note issue was beginning to approach the magnitude corresponding to the monetary supply of 1914. The index of wages had risen to 700 in October,

1930 (668 for Paris and 732 for other towns), and there the increase seems to have stopped, the index for October, 1931, showing a very slight decrease (663 for Paris and 729 for other towns). If the index of wages be taken as a test, the pre-war circulation of 11 milliards would correspond very closely with that of 78 milliards in May, 1931. As allowance has to be made on the one hand for growth in area, wealth and population, and on the other for some substitution of bank deposits for currency, we cannot definitely estimate the normal demand for currency by this method. And the experience since May, 1931, throws no fresh light on the subject, conditions having been utterly abnormal in consequence of the financial crisis.

FROM MAY, 1931, TO JULY, 1932.

Once again the data can be conveniently set out in tabular form:—

DEMAND LIABILITIES.

	Note Issue.	Private Deposits.	Total.	Public Deposits.	Total.
1931—					
29th May .	78,125	12,669	90,854	9,940	100,794
10th July .	78,186	11,977	90,163	9,556	99,719
18th September	77,575	18,426	96,001	8,177	104,178
24th December	83,547	23,639	107,186	5,874	113,060
1932—					
8th July .	81,932	22,839	104,771	3,321	108,092

ASSETS.

	Gold.	Foreign Exchange.	Total.	Commer- cial Discounts and Advances.	Advances to State, etc.	Grand Total.
1931—						
29th May .	55,634	26,135	81,769	8,969	9,109	99,847
10th July .	56,227	25,612	81,839	7,009	9,137	97,985
18th September	58,577	25,121	83,698	9,603	9,165	102,466
24th December .	68,481	20,600	89,081	10,512	11,316	110,909
1932—						
8th July .	82,472	6,042	88,514	6,191	11,038	105,743

The first stage of the crisis, from May to July, 1931, was not marked by anything very exceptional. There was some inflow of gold, but the French share of the £50,000,000 of gold lost by Germany in June was only about £5,000,000. Though private deposits did not change much on balance, they rose on the 26th June to the high level of 15 milliards. This was probably incidental to the calling in of short-term funds invested abroad.

The next stage corresponds to the period from the Darmstädter Bank failure on the 13th July, 1931, to the suspension of the gold standard by England on the 21st September. The most striking movement was the increase of private deposits to 18 milliards. This increase was the result of the calling up of foreign balances, mainly, no doubt, sterling balances. The counterpart of the increase is to be found among the assets in 2350 millions of gold and 2400 millions of bills discounted "on abroad." The latter embodied the credit created in favour of the Bank of England in August.

The crisis of September, 1931, was followed by a panic withdrawal of balances from the United States. It was not confined to France. The Belgian National Bank liquidated all its reserve of foreign exchange and replaced it with gold. Switzerland and Holland took similar measures, though not so complete. The effect in France is shown on the one side by a further increase of 5 milliards in private deposits and a similar increase in the note issue, representing hoarded currency, and on the other by an increase of 10 milliards in the gold held between 18th September and 24th December.

The reserve of foreign exchange fell from 25,121 millions on the 18th September to 20,600 millions on the 24th December. But the decrease did not all represent liquidation. An exchange loss of 2342 millions arising from the depreciation of sterling was made good by an addition of 2092 millions to advances to the State (250 millions being met from hidden reserves). Moreover, some of the foreign exchange had been employed to make "advances on gold bullion" in favour of the Bank of Spain. These advances appear under a separate heading and amounted to 576

millions on the 10th July, 1943 millions on the 18th September, and 1266 millions on the 24th December. The real extent of the liquidation of foreign assets up to the 24th December was therefore no more than 1956 millions.

Since then, on the other hand, liquidation of foreign assets has proceeded on a much greater scale. Between the 24th December, 1931, and the 8th July, 1932, they were reduced by 14,379 millions (allowance being made for an increase of 179 millions in advances on gold), and there was a further increase of nearly 14 milliards in the gold held.

Thus since the 29th May, 1931, the Bank of France has acquired 26,838 million francs of gold. In the first stage the gold came by reason of the withdrawal of money from Germany and Eastern Europe, in the second stage from England, in the third from the United States, and finally since December it has come through the liquidation of the foreign assets of the Bank of France. This additional gold was required because the holding of foreign exchange had been reduced by 16,306 millions, private deposits had increased by 10,170 millions, and the note issue had increased by 3807 millions.

The big public deposits, which had been a contributory cause of the absorption of gold up to February, 1931, have gradually melted away, partly through an unfavourable budget position and partly through capital expenditure, etc. But the relief that this would otherwise have given to the demand for gold has been lost, because the reduction of public deposits has been swamped by the other changes.

The great increase in private deposits and in the note issue is the result of hoarding, partly no doubt by individuals, but mainly by the great banks. The cash holdings of the four great commercial banks (*Crédit Lyonnais, Société Générale, Comptoir National d'Escompte, and Crédit Industriel et Commercial*) have grown as follows (in millions of francs) :—

31st December, 1929 . . .	2,660
* 31st December, 1930 . . .	3,957
31st March, 1931 . . .	4,359
30th June, 1931 . . .	5,499
30th September, 1931 . . .	8,830
30th November, 1931 . . .	12,295

The deposits in the four banks were 36,680 millions on the 31st December, 1930, and 38,350 on the 30th November, 1931. Consequently the cash proportion rose from 10·8 per cent. at the former date to 32·6 per cent. at the latter. A great part of the cash is on deposit at the Bank of France.

Thus whereas the absorption of gold up to May, 1931, was due to the need for more currency, the absorption from then to December, 1931, was due to hoarding, and particularly to panic-stricken hoarding by the great banks. The liquidation of the foreign exchange holding of the Bank of France was merely a particular case of this hoarding. The preference for metallic gold was due to mistrust of investments or credit assets. There was a difference, however, in that the Bank of France was only concerned to reduce its investments in foreign currencies, and was precluded from replacing them by French securities. No such limitation of power would prevent the commercial banks from extending their holdings of French securities.

The foreign exchange holding of the Bank of France had been reduced to 6 milliards by the 24th June, 1932, and is for the moment maintained at that figure. The absorption of gold has ceased, and it is possible that the figure for the 8th July is high-water mark.

INTERNATIONAL RESPONSIBILITIES.

In 1926 the monetary stock of gold in France was about £200,000,000, including the £18,000,000 pledged with the Bank of England, and the gold coin remaining hoarded in the hands of the people. In July, 1932, the gold in the Bank of France had risen to £660,000,000 (reckoned at par), and some millions must be added in respect of the revival of hoarding during the present crisis.

In considering the causes and effects of this vast accumulation of gold, we must make a sharp division at the outbreak of the financial crisis in May, 1931. Up to then the gold standard was functioning in something like its normal manner; the principal effect of a scarcity of gold was to be found in a restriction of credit and a consequent fall

in the world price level, accompanied by depression and unemployment.

Up to May, 1931, the French absorption of gold amounted to £250,000,000. A total holding of £450,000,000 was much the same proportion (nearly one-fifth) of the world's supply of monetary gold as France had held in 1914. If the gold had been subject to no considerable fluctuations in the interval, the concentration of so large a share in one country would have caused no trouble.

The monetary gold in France in 1914 may be estimated at 8 milliards (£320,000,000), of which half was in the Bank of France and half was in circulation. The reduction to £200,000,000 was of course due to the war.

France cannot be blamed for parting with a considerable proportion of her gold stock during the war. But when the world value of gold had been enormously reduced by the dissipation of monetary gold from the belligerent countries, some responsibility rested upon all of them to save the economic system of the world from the distresses incidental to a renewed fluctuation in the value of gold. The danger was foreseen and provided against by the Currency Resolutions of the Genoa Conference of 1922, to which France was a party. If France has forgotten them, she may fairly plead that so also have the other participating countries.

France, however, has a special responsibility towards other gold standard countries in that her monetary system has been so shaped as to absorb a very large share of the available gold. The use of cheques has made comparatively little progress there, and much of the cash which in an Anglo-Saxon community would be held in the form of bank deposits is held in France in the form of Bank of France notes. The monetary circulation is about double as much per head as in America or Great Britain. That is not evidence of hoarding in France, but merely of a difference of practice. Total cash resources per head, money and bank deposits together, are much greater in America or Great Britain than in France. But the portion subject to the limitations as to backing appropriate to a central bank of issue is much greater in France.

And these limitations are narrower in France than elsewhere. The Bank of France is more restricted than other central banks in its choice of assets.

It is really extraordinary that the responsibilities attaching to an international monetary standard are so inadequately appreciated. If the world contained a million independent states, not differing greatly from one another in size and wealth, the monetary legislation and administration of any one of them would not greatly concern the rest. They would be subject to the law of averages. But when the number of countries is only two or three score, and when less than a dozen of them are of outstanding magnitude, the action of any one of these latter, in greatly increasing or decreasing its share of the common monetary metal, may be a source of embarrassment to the others. Especially must this be so when two countries contain 60 per cent. of the entire world supply of the metal. The law of averages no longer applies.

Gold is a commodity and its value is determined by demand and supply. But far the most important source of demand is in the currency legislation and administration of the principal gold standard countries, and far the most important part of supply consists of the accumulated stocks of gold held by them.

On the other hand it does not follow that when one country makes a big change in its demand for gold the others are helpless. Gold does not enter *directly* into the determination of the price level. The supply of money is the supply of obligations of central banks, and can to some extent be varied independently of gold holdings. If the French or American absorption of gold affected the price level, that was because the loss of gold induced other countries to contract their currencies. If they had chosen not to do so, the effect of the gold movement on world prices would have been intercepted.

It may be contended, perhaps, that when France and America held £1,440,000,000 out of the world's £2,400,000,000 of monetary gold, the remainder was insufficient for the rest of the world. But that is, I think, a mistake. Efficient

methods of economising gold are in operation in many countries. Italy and Germany, for example, are in a position to regulate their currencies on a gold exchange basis by buying and selling foreign exchange. The Bank of England has power, with the consent of the Treasury, to vary its fiduciary issue, subject to certain limitations. Pre-war experience showed that a free gold reserve of £30,000,000 was ample for the discharge of London's responsibilities as the monetary centre of the world. Transactions are on a bigger scale now, but the corresponding figure may be put at not more than £50,000,000 or £60,000,000. When the Cunliffe Committee aimed at £150,000,000 as the normal minimum, they were counting the gold coin in circulation as part of the pre-war reserve. But the gold coin was not available except *after* a breakdown and a change of system. So long as this did not occur, the provision of sovereigns for circulation was rather an additional burden on the reserve than a support.

I am inclined therefore to say that while the French absorption of gold in the period from January, 1929, to May, 1931, was in fact one of the most powerful causes of the world depression, that is only because it was allowed to react to an unnecessary degree upon the monetary policy of other countries.

When the financial crisis broke out after May, 1931, the situation took on a nightmare quality. There was a panic distrust of every kind of asset that was based on credit. The epidemic of hoarding that swept over Europe and the United States accentuated the appreciation of gold which had already occurred, and which was the root cause of the crisis.

Hoarding took the form of the accumulation of idle balances of paper currency or on deposit at central banks. The hoarding of metallic gold in primitive fashion, though it occurred, was relatively insignificant. The essential significance of the hoarding was a decline of the velocity of circulation of money. It could only be counteracted by a sufficient increase in the supply of money to provide an adequate flow at this decreased velocity. It required

in fact a drastic increase in the credit assets of central banks. That increase was effected in the United States in the first instance to a great extent by an increase in rediscounts with deflationary effect, but since March, 1932, large purchases of Government securities have been facilitated by fresh legislation. No such legislation has been considered in France. And the Bank of France, while precluded from buying securities, has, as we have seen, been reducing its holding of foreign exchange, so that its credit assets have fallen from 43·4 milliards in May, 1931, to 22 milliards in May, 1932.

Since September, 1931, the gold standard has ceased to function normally except in the United States, France, Belgium, Switzerland and Holland, and their dependencies. Some other countries maintain gold parity, but most of them only at the cost of severe restrictions of the foreign exchange market. It may even be said that the only surviving significance in the gold standard is the link that it maintains between the American credit system on the one side, and the credit system of France and the three adjoining States which have remained faithful to gold, on the other.

The absorption of gold by France in the first six months of 1932 had serious reactions on the American credit situation.

In the first three months the amount of gold lost by the United States was relatively small. When the pound sterling depreciated (and with it the rupee), a large and unexpected supply of gold was tempted out of hoards in India and England by the quotation of a premium. This supply, with the current output of the mines, met the greater part of the French demand.

From April to June, however, the release of gold from hoards fell off, and the French demand was supplemented by purchases of gold for the Bank of England as well as for Belgium, Holland and Switzerland. The United States lost no less than \$480,000,000 of gold, and the effect of the purchases of securities by the Federal Reserve Banks was largely offset. Indeed in the last few weeks of the period their sales of gold actually exceeded their purchases of

securities, so that the progress achieved towards expansion was less than nothing. There was thus a conflict of policies between Paris and New York. The American policy of credit expansion was being counteracted by the French policy of credit contraction. There was no sign of revival, and doubts were expressed as to the efficacy of the expansive policy.

Since June the liquidation of the foreign exchange holdings of the Bank of France and the outflow of gold from the United States have both ceased. The slight rise in the commodity price level that has occurred in the United States suggests that the expansive policy has effected a lodgment. Whether its foothold will be secure is a question that events must be left to answer.

CHAPTER II.

SPECULATION AND COLLAPSE IN WALL STREET.

I. PAST CRISES AND INFLATION.

THE crisis of October and November, 1929, on the New York Stock Exchange differed in certain essential respects from the previous great American financial crises, such as those of 1873, 1893 and 1907.

Each of these earlier crises came at the climax of several years of growing credit inflation. Expanding credit meant expanding demand for commodities of all kinds. Expanding demand meant first increasing productive activity, and then rising commodity prices. In both ways it brought swollen profits, high dividends and rising prices of stocks and shares. Profits rise *more* than in proportion to commodity prices, in the first place because overhead expenses and fixed charges do not increase in proportion, secondly because the rise in wages lags behind the rise in prices, and thirdly because a rise in prices in the interval between production or purchase and sale yields an extra profit.

The price of a share depends upon the profits or dividends anticipated from it. A credit expansion which increases the profits increases the price. If the increase in profits is due to an ephemeral cause, it ought not to produce a proportional increase in price. If a dividend which is normally \$5 a year is doubled by some exceptional cause which is operative for two years and no more, the price of the share ought to be increased by no more than the value of the extra \$10 of profit so realised. But people often base their expectations of future yield upon present yield without taking sufficient account of exceptional circumstances. A credit expansion would often have an

exaggerated effect on the prices of stocks and shares. And when the expansion came to an end and was succeeded by a credit contraction, the reaction in the Stock Market was equally exaggerated.

Under the conditions of the generation preceding 1914 a credit expansion was a world-wide phenomenon. The price levels of different countries were connected together by the gold standard, and credit expansion in one could not outstrip credit expansion in the others without causing an outflow of gold, which would soon compel corrective measures.

So long as there were surplus gold reserves available in the gold-using countries as a whole, credit expansion was allowed to proceed. Eventually increased monetary circulation absorbed the surplus gold, and the expansion had to be stopped. Measures of credit restriction were instituted in the principal monetary centres. After an interval during which productive activity continued under the impetus of existing contracts and orders, the effects of declining demand would be felt, orders would fall off, and prices would be reduced. Profits and dividends would shrink more than in proportion, and share prices would fall.

It is in those conditions that a crisis would occur. Not only those who are holding either commodities or shares with borrowed money, but those who have bought them for future delivery, suffer losses which may threaten their solvency. As prices fall, the commodities and shares provide an insufficient margin of security for the obligations of the holders or purchasers, and unless they have other resources free to be pledged, they may be compelled to sell in order to meet their engagements.¹

Forced sales, causing a collapse of prices, are the characteristic of a crisis. In former American crises the forced sales both of commodities and of stocks and shares were precipitated and intensified because the banks were prevented from lending by a scarcity of cash. At a time when a world shortage of gold was causing a credit con-

¹ For a fuller treatment of Financial Crises, see my *Currency and Credit*, chaps. x and xi (3rd Edition).

traction at other centres, the rigid reserve laws of the American banking system of those days brought about in numerous cases an absolute refusal to lend, which gave the crisis a convulsive character.

II. AMERICAN BUSINESS CONDITIONS, 1920-29.

Nothing of the kind occurred in 1929. The mere existence of the Federal Reserve System made a fundamental difference, in that any member bank (and nearly all the important banks are members) could readily make good a shortage of reserves by rediscounting paper with the Federal Reserve Bank of its district. But that was not all. There was an enormous surplusage of gold. And at the time there was no embarrassment in the commodity markets. The crisis was confined to the Stock Markets.

To make the circumstances of the crisis clear, I must give a brief outline of the preceding course of events.

The centre of interest of the story will be the index of the prices of stocks and shares on the New York Stock Exchange. For the period since 1923, we have the Standard Statistics Company's index of the prices of 351 (formerly 337) industrial shares, which is computed weekly. For earlier years we have to use a less comprehensive index. The *Annalist* index averages the prices of 25 industrials for a series of years going back to 1913.

The year 1920 saw the culmination of the war-time and post-war inflation, which carried the American wholesale commodity price level from 100 in 1913 to 247 in May, 1920. The effect of such a rise in the price level upon the prices of shares was bound to be very great, and the *Annalist* index rose from 58 in 1913 to 116 in the year ending June, 1920. This was less in proportion than the rise of the commodity price level. But the whole of the rise in commodity prices could not be assumed to be permanent. And, moreover, there had been a big rise in the rate of interest. The rate of interest may be tested by the yield of fixed interest-bearing securities, and we find that the average yield at market prices of 45 bonds (industrial, public utility and railroad) rose from 4.78 per

cent. in 1913 to 6·18 per cent. in 1920. An annual sum that had been worth twenty-one years' purchase became worth little more than sixteen.

There followed a tremendous collapse of commodity prices, which brought the wholesale index down from 247 in May, 1920, to 138 in January, 1922, and the index of share prices fell to 70 in August, 1921, the average for 1921 being 79·38. A severe trade depression, with widespread unemployment supervened. The conditions were very similar to those in which former American crises occurred, except that the elasticity introduced by the Federal Reserve system (which was instituted in 1914) enabled the trading community to escape without panic.

The year 1922 saw a marked revival of trade. The price level rose, the index reaching 159 in March, 1923, and unemployment vanished. But the Federal Reserve Banks, exercising a prudent discretion, set themselves so to regulate credit as to avoid a recrudescence of inflation. At that time the gold standard as an international institution was in abeyance. From a monetary standpoint the United States was practically in the position of an isolated community. The Federal Reserve Banks took advantage of this unique combination of a metallic standard with independence of foreign monetary conditions to carry out a notable experiment in credit stabilisation. Perfect stabilisation was not attained. There were variations in the price level. There were noticeable reactions in trade in 1924 and 1927. But the variations in the price level were soon corrected, and the reactions in trade were too short and fleeting to amount to depressions. For the whole period from 1922 to 1929 business in the United States was practically free from the vexations of the trade cycle.

It is this happy experience that provided the setting for the sensational Stock Market speculation which ended in the crisis of 1929. In 1923, when business had recovered from the depression of 1921, the *Annalist's* index of industrial shares rose to 107·78. It was little less than in 1920, though the commodity price index was only 52 per cent. above that of 1913.

For the same year, 1923, we have the beginning of the Standard Statistics Company's index of 337 shares. That index is so computed as to be 100 in the base year 1926, and for 1923 it was 66.6. In the following year, 1924, it stood slightly higher at 69.8, and thereupon there ensued the sensational progression which brought the index to 216 in September, 1929. The prices of industrial shares thus on an average more than trebled in five years.

This was not a wild-cat speculation, a modern South Sea Bubble. It was not associated with a rise in the commodity price level. The year 1923 had seen a rise of prices at one time 15 per cent. above the low point of 1922, and share prices had risen in sympathy then. But we are now concerned with the further rise in shares *after* 1923, and in the years from 1923 to 1929 commodity prices on the whole fell rather than rose.

The rise in shares was not based on the fictitious profits derived from inflation. Nevertheless, the increase in industrial profits was sensational. We have from the Federal Reserve Bank of New York quarterly statistics of the profits of ninety-nine industrial companies. For the year 1924 their total profits were \$416,000,000. For the year ending September, 1929, their profits were \$1,065,000,000. Even if some allowance has to be made for additional capital issued by the companies in question,¹ an increase of 156 per cent. in the profits is enormous. It accounts by itself for the greater part of the trebling of the prices of shares. It does not account for the whole, but it makes that increase no longer look extravagant.

Moreover, the evidence of the market in fixed interest securities shows that the long-term rate of interest was falling. The average yield of 45 bonds, to which I have already referred, having risen to 6.18 per cent. in 1920, as compared with 4.78 in 1913, fell to 5.22 in 1923, and thereafter fell steadily to 4.63 in 1928. There was a reaction, it is true, in 1929, bringing the yield up to 4.84, but even this was only a small fraction above the average

¹ No allowance has to be made for additional capital accumulated out of profits, for that would add to the value of the shares.

yield in 1913. The market value of an annuity in this form had risen from sixteen years' purchase in 1920 and nineteen years' purchase in 1923 to nearly twenty-one years' purchase in 1929. In virtue of these lower rates of long-term interest, the shares of an industrial concern with a given expectation of profit would command a higher price.

This cause was small in its effects in comparison with the growth of profits. It is the growth of profits that demands explanation. And to understand the growth of profits we must turn to the statistics of manufacturing industry.

III. MANUFACTURING PROGRESS.

In the period 1925 to 1929 the index of manufacturing production in the United States rose from 101 to 119, the index of factory employment fell from 104·2 to 100·4, and the index of weekly earnings or pay rolls rose from 103 to 108. The increase of output by 18 per cent. was secured with practically no increase in labour costs.

The biennial census of manufactures tells the same story in the following figures :—

	Net Output (\$ millions).	Wage-earners Employed.	Wages Paid (\$ millions).	Horse-power Employed.	Price Index of Finished Products.
1923	25,850	8,778,000	11,009	33,094,000	99·2
1925	26,778	8,384,000	10,730	35,773,000	100·6
1927	27,585	8,349,000	10,849	38,826,000	95·0
1929	31,900	8,836,000	11,684	43,079,000	94·5

Here the net output is the excess of the value of the output of each manufacturing concern over the value of materials used. It is the value of the manufacturing processes, and represents the total of the wages, salaries, interest, depreciation, rent and profit derived from manufacturing. In the six years 1923-29, the value of the net output rose by \$6,050,000,000 or 23·4 per cent., whereas the wages

bill rose by only \$675,000,000 or 6 per cent., and there is a difference of \$5,375,000,000 to be accounted for.

A part of the difference has to pay for the increased amount of capital employed, of which the growth of 10,000,000 in the horse-power employed is clear evidence. Of the value of this additional capital it is difficult to form an estimate. New manufacturing plant is by no means a very large proportion of the total of new capital outlay. If it is estimated at \$2,000,000,000 to \$2,500,000,000 a year, the addition to plant in six years would be from \$12,000,000,000 to \$15,000,000,000 and the interest and depreciation charges would be perhaps \$3,000,000,000.

That is a very rough calculation, but it would point to an additional profit of some \$2,000,000,000, an increase much more than in proportion to output.

The increase in profits was the fruit of improved processes and improved organisation. In recent years invention has been busy in all directions, and no country has made so extensive a use of it in industry as the United States. The application of new inventions has involved both a rapid replacement and a substantial extension of plant. In the circumstances of recent years, the necessary resources have been forthcoming on a lavish scale in America. It is true in this respect, as so often in economic affairs, that to him that hath shall be given. Resources for new investment are derived mainly from profits. When industry is profitable, plenty of fresh capital is available, and an intelligent use of the fresh capital leads to increased profits. And abundance of capital resources stimulates invention because it provides the necessary opportunities to apply new processes.

The abundance of capital in the United States is illustrated by the fall in the long-term rate of interest to the pre-war level, at a time when the rates in European countries, though they have fallen, are still far higher than before the war. But a large proportion of the capital has been supplied not by issues in the market at all, but by the limitation of dividends and the retention of a large proportion of profits in the business in the form of reserves.

The accumulation of reserves has been in some cases an important contributory cause of the rise of the market value of shares.

The increased productivity of American industry has been due not only to the embodiment in new fixed capital of technical inventions, but also to important improvements in organisation, partly the appreciation of scientific management, and partly also the movement towards larger units.

Not only has mass-production brought greater productive efficiency to industries of certain types, but large-scale business has invaded the domain of retail dealing. Among the speculative favourites of Wall Street, several big multiple shops or chain stores have been conspicuous. Commercial concerns of that type are not included in the statistics of industrial profits, production and employment which I have quoted, though they are included in the so-called industrial shares.

Large-scale business, whether industrial or commercial, has brought increased profits. But this has not been exclusively through real economies; it has been partly through encroachment on the domain of existing smaller concerns. The profit which has been capitalised in the hands of the shareholders has not been all new, but has partly been filched away from weaker competitors.

The increase in industrial profits, great as it was, was not by itself enough to account for the rise in shares between 1923 and 1929. The residue may be regarded as a capitalisation of a prospective increase of profits. It has sometimes been argued that a prudent investor or even a prudent speculator ought not to pay anything for a prospective increase of profits. But this is obviously wrong. The purchase of a share is in any case a purchase of *future* profit, and it is illegitimate to assume that the existing profit will continue in the future unchanged.

The prudent purchaser must allow for the possibilities both of increase and of decrease. If there really is a balance of probability in favour of increased profits it is perfectly reasonable that this prospective source of wealth should be paid for. The seller of the shares could not otherwise

be expected to part with them. It would be ridiculous if all shares promising increased profits were in principle unsaleable, merely because investors had been taught that they ought not to pay anything for the expected increase, and holders refused to sell something for nothing.

When the current rates of profit have been swollen by rising prices, the prudent investor will know that this is an essentially transitory advantage. When prices stop rising, even if there is no subsequent decline, costs will accommodate themselves to the new price level, and profits will fall to the normal proportion. If the rise of prices is due to inflationary conditions, and credit expansion is threatening to outstrip the limits imposed by the gold standard, there must presently be an actual fall of prices, profits may become less than normal. That is what happened in the great crises of the period before 1914.

But when an increase in profits has been caused by improved efficiency and by fundamental economic advantages, it is reasonable to look forward to more permanent results. The improvements in American industry and business have not been of a temporary or precarious character. New inventions often give temporary monopoly profits which will only last till competitors have adopted them. But the element of monopoly in American business at the present day is usually founded upon the overwhelming efficiency of the big unit.

It may perhaps be suggested that the statistics of manufacturing output imply in some degree the existence of inflationary profits in 1929, in that the improvements in production that had been effected between 1923 and 1929 ought to have been reflected in a reduction of selling prices rather than in an increase of profits. There was a reduction of selling prices, as the table given above shows, though not in proportion to the increase in productivity. But what brought increased profits to the American producers was just the fact that they were reducing costs in a greater degree than those of other countries. Their costs were lower relatively to the world price level. And even if this were in part due to a fortuitous and

transitory advantage, it was undoubtedly in part also due to special advantages of American concerns in the organisation of large-scale production, which were permanent. American industry was gaining ground on its competitors. At this same period, British industry was in a state of chronic depression. The price level of British manufactured exports fell by about 15 per cent. between 1925 and 1929. German industry only recovered from the sharp depression of 1926 through an enormous importation of capital. France escaped a "stabilisation crisis" because with the devalued franc the gold value of French wages was disproportionately low.

The high profits of American industry were due not to an inflated price level but to a very striking industrial progress which brought the country greatly increased economic strength. This increased economic strength not only made the world price level, even though falling, highly remunerative to American producers, but it required the internal price level to be higher relatively to the world price level, so that American prices, as a whole, showed a smaller fall than world prices.

The increase of American economic strength is none the less a fact in spite of the disastrous depression which has since occurred. For the moment American industry is unprofitable and under-employed; it is reduced almost to a state of paralysis. But the depression is a state of disequilibrium which cannot last indefinitely, and the potentialities of American industry remain unimpaired.

IV. SPECULATION IN COMMODITIES.

While it is evident that prospective profits are rightly allowed for in the price of shares, the determination of the fair value of the prospective profits is a matter of great difficulty. The market reflects the *opinions* of those who buy and sell in it. Each backs his opinion with so much of his resources as he chooses to place in the market, and the weight of his opinion is proportional to the amount of this backing.

This is true of the commodity markets as well as of the markets in stocks and shares, and perhaps it will be helpful to illustrate the functioning of a speculative market in the first instance from the commodity markets.

In a commodity market the price tends towards such a level that dealers can be found willing to hold just the existing available supply of the commodity, no less and no more. The quotation of a price will divide dealers into two groups, those who think that the price is low and promises a profit to the holders, and those who do not. The former are those who are willing to hold the commodity in stock, and if the aggregate of the resources which they place in the market is equal to the aggregate value of the available supply of the commodity, the price quoted secures equilibrium. If their resources are insufficient, a reduction of price will bring some other dealers into the group of willing holders; if their resources are more than sufficient, a rise of price will make some of the willing holders unwilling. The adjustment is not effected solely by the inclusion or exclusion of individuals among the class of willing holders; the amount of resources that a dealer within the class will apply to holding the commodity will depend upon the attractiveness of the price. If he thinks the price substantially below the economic level, he will make a special effort to buy as much as possible. If the margin is narrow he will be more cautious. The holders will usually supplement their own capital with a certain amount of borrowed money. In a highly organised market the stocks of the commodity held themselves supply security for bank advances. Those holders who are most confident of a rise of price will borrow more than usual; those who are more doubtful will borrow less.

When we say that the action of a dealer is governed by his opinion as to the market price, we mean that he is comparing the market price with the price which in his opinion will in the near future balance the demand for the commodity from the ultimate consumer and the supply of it from the producer.

The market is an intermediary between consumers and

producers, and the stocks which the dealers have to hold are continually being added to by production and drawn upon by consumption. The price quoted in the market may be regarded as a forecast of the price that will equalise the inflow and outflow of the commodity, and the dealers' opinions are perpetually being modified by the actual state of this inflow and outflow.

The holding of a stock of the commodity is in a sense a speculation, for it is a transaction depending on a forecast of future sales which are necessarily uncertain. But in this sense *all* economic activities are speculative. Speculation in the special and technical sense occurs when contracts are entered into for purchases and sales *at future dates*, forward contracts as they are called. Of these forward contracts some are made with producers. These have a direct effect on price. When orders fall off, producers make concessions on the price in order to keep their works employed. When orders increase, and particularly when they increase so far as to strain the capacity of producers, prices rise. But this process is not mere speculation in the technical sense. The dealer who buys forward may be a speculator, acting on his opinion, but the producer is playing an essential part in the mechanism by which the economic price is determined.

Pure speculation occurs when a dealer buys forward not from a producer but from another dealer. Then both buyer and seller are simply backing their opinions.

For the purpose of making a profit through a rise of price, he who buys forward is in just the same position as he who acquires part of the supply available on the spot (except that the market would probably quote a slightly different price for a future date).¹ The forward purchasers form part of the same group as the holders of the existing stocks of the commodity. And on the other hand, there will be a contrary group of forward sellers. The equilibrium price will be such that the excess of the resources engaged by the former group in the market over those engaged by

¹ With regard to forward quotations in the commodity markets, see Mr. Keynes's *Treatise on Money* (vol. ii., pp. 142-4).

the latter is equal to the value of the existing stocks, together with the orders given to the producers.

The practice of buying and selling forward incidentally increases substantially the resources with which the dealers can back their opinions. For the forward purchaser does not have to provide any money till the time comes to accept delivery of the goods on the agreed date. He is in the position of a borrower of the purchase price from the seller of the goods, while the seller is in the position of a borrower of the goods for the same period from the purchaser.

It is hardly necessary to say that this extension of the resources of dealers in the market is not unlimited. The market is probably so organised as to limit the right of dealing to men of substance and to provide some safeguard against overtrading by any one dealer. And in any case the prudent dealer is unwilling to over-extend his commitments.

It is therefore still true that the weight carried by the opinion of any dealer as to price is determined by the resources that he is able and willing to engage in the market. This applies, it may be pointed out, to the forward seller as well as to the buyer. The forward seller is a debtor, not of money, but of commodities, but he is none the less a debtor.

V. SPECULATION IN STOCKS AND SHARES.

The foregoing exposition relates to speculation in the commodity markets. The stock market is in certain respects more complicated.

The stock market buys new issues of securities from the promoters of capital enterprises, and sells securities to investors. It acts as an intermediary between the promoters and the investors. If the absorption of securities by investors in any interval of time exceeds the supply of new issues, the market's holding of securities is diminished ; if absorption falls short of new issues, the holding is increased.

The absorption of securities by investors is a net total. Investors differ from the consumers of commodities in

being sellers as well as buyers. They thus have some of the characteristics of dealers in the market. The investor, like the dealer, possesses a holding of securities from which he can sell as well as buy, and, like the dealer, he will sometimes extend his holding with borrowed money to take advantage of a favourable opportunity to buy.

From one point of view the Stock Exchange is a single market. Any investment represents the payment of a capital sum for the receipt of a future income, and every investment competes with every other. But from another point of view there is a separate market in each security. Each has its own characteristics and prospects, and for each a price has to be found which will equalise demand and supply.

Of the total issue outstanding of any security, a part is held by investors who do not attend to the market because they do not contemplate selling at all; a part is held by dealers for the purpose of their business of buying and selling; a part is held by speculators and speculative investors who, though not professional dealers, are ready to sell as well as to buy when a promising opportunity offers. The line between the investors and the speculators is indeterminate and fluctuating. The ordinary investor is disposed to regard the verdict of the market respecting the value of a security as final; he does not hope to be wiser in the matter than a professional dealer, still less to surpass in wisdom the resultant opinion of all the professional dealers as embodied in market price. But when prices fluctuate materially over short periods, this is clear proof that the opinion of the market is not trustworthy. If shares which stood at 50 last week are quoted at 60 this week, both quotations cannot be right. The man who questioned the market price last week might have made a big profit. All the more reason to question it this week. Thus fluctuations of price of themselves tend to turn investors into speculators. And the addition of speculators to the usual number of dealers tends to bring about greater fluctuations.

The equilibrium price of the shares is determined in

the same way as in a speculative commodity market. Some of the dealers and speculators think the market price low and seek to buy ; others think it high and seek to sell. In order to secure equilibrium at any moment of time, the aggregate resources engaged in *buying forward or holding* must exceed the aggregate resources engaged in *selling forward* by the available amount of shares in the market.

Forward sales and forward purchases are necessarily equal, because they are simply two sides of the same set of transactions. And every one of the existing shares is held by somebody. In equilibrium no one is an unwilling holder. Even when equilibrium is disturbed, still, so long as the market is functioning freely, any unwilling holder can sell, and any one desirous of holding can buy, so that the departure from equilibrium will be reflected exclusively in the holdings of the professional dealers. It devolves upon them to take steps to correct the disturbance and restore their own holdings of the shares to normal. That they do by altering the price. If their holdings have increased above normal, they try to find additional buyers by lowering the price ; if their holdings have decreased below normal they raise the price. When the future is very uncertain, they may seek to discourage transactions either way by widening the gap between buying and selling prices. And in extreme cases, the market breaks down ; dealers refuse to buy or sell at all, and quotations become " nominal." When that happens, the burden of sustaining an excess or deficiency of holdings is shifted from the market to the public. That is to say, it is among the public that unwilling holders or unsatisfied purchasers are to be found.

But a speculative market is an active market, and an active market does not easily break down. Dealers will quickly become aware of an excess either of purchases or of sales, and speculators will quickly respond to the adjustments of price made to correct such an excess. The price will therefore approximate closely (or at any rate quickly) to the equilibrium level, such that the excess of the resources placed in the market by the bulls (i.e. holders and forward

buyers as a group) over those placed there by the bears (the forward sellers) is just equal to the total amount of shares outstanding.

The bulls are those who think that prices will not fall, and the bears are those who think that prices will fall. Each party is backing its opinion with its resources. (The bull party, of course, includes all the inert investors, who do not seek to make capital gains or avoid capital losses, but some of whom may be led to study the market by events materially affecting the value of the shares.)

Professional dealers may be found in either party. A dealer is likely to be both a forward seller and a forward buyer, because his clients may include both bulls and bears. If his holding, *plus* his forward purchases, *minus* his forward sales, is above normal, he is himself a bull; if it is below normal, he is a bear. Bulls and bears back their opinions with the resources they employ in the market. But these resources are a very elastic quantity. For dealers and speculators alike can easily reinforce their own capital with bank credit on an extensive scale.

If we suppose the market in certain shares to be perfectly quiescent, there may be little or no money borrowed for the purpose of carrying the shares. The holders are employing a part of their own capital in support of their opinion that the shares are worth holding; those who sell do so, not because they fear a fall of price, but because for one reason or another, they want cash in place of an investment; those who buy do so because they think the shares are a sound investment and worth not less than the market price.

In such a market the price will be made by the professional dealers, and acquiesced in by the buyers and sellers from among the public. If the inert holders be left out of account, the amount of resources employed in backing an opinion as to price is very limited indeed.

But if speculators enter into the market, the amount of resources employed may be increased almost indefinitely. A speculator does not need much capital. If his banker or stockbroker requires a 50 or 25 per cent. margin, he can

buy or sell forward to the extent of three or five times such portion of his own capital as he is willing to risk.

Consequently, the opinion of the speculators carries undue weight. Presumably they study the market. If they are prudent, they certainly will do so, and the intrusion of well-instructed opinion into the market (even if backed by an excessive amount of resources) should not pervert the price. But speculators are often imprudent, and even the prudent ones often find wisdom in studying the psychological vagaries of their fellow-speculators rather than the merits of the shares in which they are concerned.

When speculation begins, therefore, there is a danger that vast sums may be embarked in the market to back opinions as to value, which have only a very remote connexion with the merits. The available resources of the professional dealers may be quite inadequate as a counterpoise to those of the speculators. Suppose that there are 10,000,000 shares of some concern outstanding and that dealers hold in all 1,000,000, and suppose that, on the strength of some event promising a rise of value, speculators descend on the market to buy 5,000,000. If the dealers take the same view of the prospects as the speculators, they will raise the price immediately to such a level that the speculative purchases will be checked. More probably the price quoted will not choke off the speculators altogether, but will divide them, leaving some as buyers but bringing others into the market as sellers.

But suppose that the dealers are sceptical of the prospects, or at any rate less sanguine than the speculators. What are they to do? Are they to fix what they regard as a reasonable price and sell? They cannot, for unless there are some sales from investors (who are likely to keep the shares if the market quotation is no more than a reasonable valuation of the prospects) they will not have enough shares to satisfy the demand. They *must* raise the price, though, of course, they can operate as a moderating influence by reducing their own holdings below the normal 1,000,000 shares. They may even sell more than this forward if they expect prices to fall in a short time. But

they will be reluctant to assume a very large bear commitment at a time when the future extravagances of the speculators cannot be foreseen.

Thus the professional dealers cannot prevent speculators from running away with the price. The existence of a large volume of speculation with borrowed money is itself a danger signal. It means that the price represents the opinions of speculators rather than of professionals.

VI. BROKERS' LOANS.

In New York the practice of the Stock Exchange is to require a settlement *every day*. The broker is in the position of lending *money* to the speculative purchasers or bulls, and lending *shares* to the speculative sellers or bears from day to day. A certain amount of money is lent direct by banks to speculators, but usually the greater part is lent by the banks to the brokers and by the brokers to the speculators.

An outstanding feature of the recent speculation on Wall Street was the magnitude of the loans to brokers. It was this that specially marked out the movement as speculative. A great rise in the value of shares might occur in any market without possessing a speculative character. It might mean no more than an appreciation of the shares in the hands of investors. The enormous expansion of loans to brokers was clear evidence of speculative activity.

The detailed statistics of brokers' loans compiled by the New York Banks begin with January, 1926, when the total was \$3,126,000,000. That was itself a very big increase on two or three years before. After a slight setback in the course of 1926, the total began to mount rapidly and reached a maximum of \$6,800,000,000 in October, 1929, just before the collapse. It had thus more than doubled.

Caution, however, is necessary in interpreting these figures. It would be quite wrong to jump to the conclusion that the normal demand from investors for stocks and shares was reinforced by an additional \$3,700,000,000 of bank

advances. For analysis shows that of the \$6,800,000,000 of loans to brokers, only \$2,900,000,000 were lent by banks. The balance of \$3,900,000,000, though lent through the agency of the banks, emanated from other lenders.

Who were these other lenders? When a bank lends, it creates credit. Against the advance which it enters among its assets there is a deposit entered among its liabilities. But other lenders have not this mystical power of creating the means of payment out of nothing. What they lend must be money that they have acquired through their economic activities.

An industrial or commercial concern which derives a substantial part of its working capital from bank advances never has much idle cash. For any receipts in excess of a necessary working balance can be applied to paying off bank advances and thereby saving interest. But it is a not uncommon practice and a growing one, to make a concern independent of bank advances by raising enough initial capital to cover its maximum needs for working capital. Such a concern will at times have idle cash representing so much of its working capital as is not required.

Or again a concern, while continuing to rely on bank advances to supplement its working capital, may accumulate a reserve or surplus out of its profits in addition to the requirements of its own business for capital, or may invest the sums so accumulated in securities, which will serve as collateral whenever it needs to borrow.

When speculation developed in Wall Street, and gained ever-increasing momentum, the speculative buyers of shares required to borrow. The banks were not willing to increase their loans to brokers indefinitely, and the interest charged on such loans was raised. Industrial and commercial concerns with surplus funds then found that instead of placing these funds on time deposit at low rates of interest or investing them, they could lend them through the agency of banks at 6 or 7 per cent. or more to brokers. The opportunity appealed not only to businesses with surplus working capital but to individual investors who had money in hand and to investment

companies. In fact, at the time when speculation was most active, and when the prices of stocks and shares were rising most rapidly, there were to be found many intending investors who felt and expressed extreme scepticism as to the soundness of the speculative movement, and who, in fact, believed that the stocks and shares were monstrously over-valued at market prices. These people deliberately withheld their money from investment in the expectation of a reaction of prices, and found a profitable outlet for it in the loans to brokers.

Thus for the most part the loans from others than banks did not form an addition to the resources of the investment market, because they represented money which was being held back from investment. That would not apply to all the loans. The high rate of interest must also have attracted some money from people who would not otherwise have invested it but would have held it on time deposit at a much lower rate. Had it been held on deposit, the banks would have held equivalent assets against it, but those assets need not have included either investments or loans to brokers. Here therefore there may have been a real addition to the resources of the stock market.

Nevertheless, of the greater part of the loans to brokers from others than banks it is safe to say that, if the money had not been lent, it would itself have been invested. The lenders were in the position of bear speculators, except that instead of selling shares they merely refrained from buying. During the whole period up to the collapse in October, 1929, a relatively unimportant part was played by bear speculators in the narrow technical sense, those who sell shares forward in expectation of a fall of price. Their place as the indispensable opposition party to the bull speculators was taken by these lenders of call money. To produce active speculation, there must be a wide difference of opinion within the ranks of those dealing in the market. If all agreed, then prices would be at the level they agreed on, and no one would expect to make an exceptional profit either by buying or by selling. Speculation raged in 1927, 1928 and 1929, just because this difference of opinion

existed. If people were found ready to back with sums aggregating thousands of millions of dollars their opinion that shares were going to rise still higher, others were found ready to back with thousands of millions the contrary opinion that shares were already over-valued. The excitement was great because the gap between the two opinions was wide, and the gains and losses at stake correspondingly great.

VII. NEW CAPITAL ISSUES.

Under these conditions there is obviously a danger that there may be an excessive creation of bank credit in favour of the bulls, the speculators for a rise. That would have two undesirable results. In the first place, it would add artificially to the weight carried by the opinions of the bulls as compared with those of the bears. And secondly, the creation of additional credit would disturb the equilibrium of the banking system, and would tend to cause an inflationary rise of prices and expansion of profits.

But it is important to be clear as to the pre-requisite conditions of such a credit creation. Insistent pressure from bull speculators for advances from the banks is not by itself sufficient. For if the banks give way to the pressure and lend to the speculators, and the speculators forthwith use the money lent to buy shares, then since every purchase implies a sale, the sellers of the shares will have to find something to do with the money. If they use it to buy other shares, or lend it to some one else to buy shares, they merely pass on the problem for solution to the sellers of these shares. And the solution can only come *either* by the money passing into the hands of some one who uses it to repay bank advances (probably because he has been carrying the shares sold with borrowed money), *or* by the money being used to buy new issues of securities which did not exist before. Therefore there will be, on balance, no creation of credit *unless* there is an increase in new issues.

Thus a bull speculation does not in itself cause a creation

of credit. It only does so in so far as it stimulates new issues. That, of course, it is very likely to do. The same state of mind that makes people take a sanguine view of the prospective profits of existing concerns will dispose them to invest in new concerns. And the relief of the professional dealers from a part of their usual holding of securities with its accompanying indebtedness will lead them to encourage new issues. They will report the market as favourable, and it will be easy to obtain underwriters.

Thus it is in the new issue market, the provision for new capital outlay, that the effect of speculation on the creation of credit is to be looked for. But this proposition is subject to two important qualifications.

In the first place, at a time of successful bull speculation, people will be drawing profits out of the investment market and treating them as *income*. An example will make the process plain. Suppose a man buys shares for \$15,000, \$5000 being from his own resources and \$10,000 being borrowed. He sells at \$18,000 to some one who borrows \$12,000 and supplies \$6000 from his own resources. The speculator's profit is \$3000. If he treats this as capital and invests it, it becomes available through one channel or another to diminish the indebtedness of the investment market. But he may treat it as income and spend it on consumable goods. If he does, the indebtedness of the investment market is increased by the \$2000 borrowed, without any increase in new issues having occurred. Few speculators would treat their gains wholly as income. More usually, the prudent speculator regards them as a windfall to capital, and the gambler engages them in a new speculation. But both would be inclined to draw out a portion for personal expenditure. And it must be remembered that the regular income of the stockbroker is drawn in the form of commission from the proceeds of sale of securities, and is greatly increased when speculative activity swells the turnover of shares.

For theoretical purposes, sums drawn out of the investment market as income are best treated as "negative savings," a deduction, that is, from the funds placed by

investors in the market. They increase the indebtedness of the market because the deficiency of savings tends to bring about an excess of a given amount of new issues over savings.

The second qualification of the general principle that speculation stimulates the creation of credit only through stimulating new issues, is to be found in the relation of the investment market to foreign investment markets. Foreign markets may affect the situation either way; they may on balance be buyers or lenders and may relieve the speculative market of part of its securities and of its indebtedness, or they may on balance be sellers or borrowers with the contrary effects. In the Wall Street speculation the statistical evidence goes to show that foreign intervention took the form of the purchase, on balance, of a very considerable amount of American securities and a large sum was believed to have been lent to the Wall Street brokers. The money lent at call appears to have been taken for the most part from foreign deposits that were already in America, but the general effect of foreign intervention was to diminish to a very considerable extent the expansion of credit that the speculation tended to bring about.

I have already mentioned that the expansion in the loans by banks to brokers in the period 1926 to 1929 was comparatively small. Of the \$3,126,000,000 of loans to brokers in January, 1926, \$2,541,000,000 were bank advances and only \$585,000,000 were from lenders other than banks. On the 16th October, 1929, when the total reached its maximum of \$6,801,000,000, loans from banks accounted for \$2,926,000,000 and from other lenders for no less than \$3,875,000,000.

The increase of \$385,000,000 or 15 per cent. in loans from banks was of no great consequence. On the other hand, some speculators would of course borrow direct from the banks and not through brokers. We have statistics of the loans on stock market securities by those banks which make weekly reports to the Federal Reserve Board. These include all the most important banks in

the principal cities of the United States, and may be taken as an adequate sample. The increase in this total was large. It rose from \$5,864,000,000 at the beginning of 1926 to \$7,654,000,000 in September, 1929. But it must be borne in mind that loans of this class are frequently raised for purposes other than the purchase of the securities that form the collateral. Bonds as well as shares frequently supply the most convenient collateral security for a loan to meet an exceptional outlay, whether for business purposes or personal. The total of loans on securities rose abruptly at the time of the crisis to \$8,249,000,000 (average for November, 1929), and after an intervening decrease rose further to \$8,568,000,000 (June, 1930). This certainly suggests that the earlier increase was not to be attributed primarily to the speculation.¹ Thus it is quite a mistake to attribute the speculation to the over-weighting of the opinion of a vast bull party by the creation in their favour of a mass of inflated bank credit. The greater part of the brokers' loans with which the bulls backed their opinions was composed of the resources with which the bears were backing their contrary opinions. So far as this was so, there was no net addition to investible funds in the market.

Nor were the bulls allowed very liberal credit facilities. It was the practice to require a 50 per cent. margin for brokers' loans. And it should also be mentioned that no speculative movement has ever been supported by so much intensive expert study of the securities dealt in. The weak point of the expert advice which the speculators received was that it took for granted the continuance of the economic fair weather in which the sensational increase in profits had occurred. A vital condition of this prosperity had been the monetary stability of the period 1922-28, and Governor Benjamin Strong of the New York Federal Reserve Bank, to whom more than to any one the policy of monetary stability had been due, died in the autumn of 1928.

¹ There was a heavy decrease in loans on securities in 1931. But that was part of an extensive liquidation and credit contraction, and was no greater than the collapse of security prices would in any case bring about.

If the principal symptom of an inflationary effect arising from stock exchange speculation is to be found in an increase of new capital issues, a first glance at the statistics would certainly suggest that this must have occurred at any rate in 1929, whatever the statistics of loans on stocks and shares may seem to imply. But a closer scrutiny of the figures will soon modify this view. The following is an analysis of American capital issues since 1926 (in \$ millions) :—

	Total.	Investment Trusts.	Others.
1926	6,344	71	6273
1927	7,791	175	7616
1928	8,114	787	7327
1929	10,183	2222	7962
1930	7,039	233	6806

The investment trust shares do not constitute *additional* capital issues at all. All their capital is devoted to buying other investments, and so becomes available through the market directly or indirectly to buy the other new issues. To get a reliable measure of the real amount of new capital flotations, we must deduct the investment trusts, and then we find that the growth is substantial, but, considering the real growth in prosperity, is by no means disproportionate.

VIII. CREDIT POLICY, 1922-28.

I have shown that the speculation which trebled the average market values of shares in the American market between 1923 and 1929 was not due to inflation. But that does not mean that its progress was not intimately associated with credit conditions. And I now propose to explain briefly what the relations of credit policy to the stock market were, and how the speculation came to end in collapse.

Credit policy in the United States is in the hands of the Federal Reserve Banks, and particularly of the New York Federal Reserve Bank. Each of the twelve banks plays the

part of a central bank in its own district. Its obligation supply the district with currency in the form of Federal Reserve notes, and supply the member banks with reserve and balances for clearing purposes in the form of deposits. When the member banks are short of cash, they supply themselves by borrowing from the Federal Reserve Bank by way of getting bills rediscounted. When a Federal Reserve Bank adds to its assets, whether by rediscounting bills or by buying securities in the open market or by acquiring gold, it adds to its liabilities. And, as those liabilities count as cash for the purposes of the public and the member banks, it thereby creates money.

Thus the Federal Reserve Banks relieve a scarcity of cash *either* by rediscounting bills for the member banks *or* by buying securities in the open market. And they can *cause* a scarcity of cash by selling securities. If they want to bring about a contraction of credit, they raise their rediscount rate and they sell securities. The sale of securities creates a scarcity of cash, and compels the member banks to get bills rediscounted. The rediscount rate becomes effective, in the sense that the member banks raise their own charges for loans and take other steps to discourage borrowers.

Similarly, when the Federal Reserve Banks seek to bring about an expansion of credit, they not only lower the rediscount rate, but they also buy securities. The member banks, finding themselves supplied with redundant cash, and to a great extent relieved from the need of getting bills rediscounted, are led to encourage borrowers.

The intention of the Federal Reserve Act which created the system was that the twelve banks should be co-ordinated by the Federal Reserve Board at Washington. In practice, it has been found that the real centre of the system is the New York Bank. New York remains unchallenged as the financial centre of the country. It contains the market in short-term borrowing to which all other such markets in the United States are subsidiary. To some extent this applies to the market in commercial paper, promissory notes of the kind employed in the rediscounting business.

But more especially it applies (1) to the market in bank acceptances, bills of exchange drawn upon banks, a new development since the Federal Reserve Act removed legal obstacles from its way, and (2) to the market in call money, the real "money market" of American financial history.

This call money is the money lent from day to day to stockbrokers, the "brokers' loans" to which we have already referred. Dealings in it form a free market, in that a bank does not lend only to its own customers but to any eligible borrower, and the rates of interest quoted and the other conditions of the loans are therefore fully competitive. Before the institution of the Federal Reserve system the American banks had no rediscounting facilities open to them, and the call loan market provided them with an indispensable second line reserve with which they could reinforce their cash in case of need at a moment's notice. The rediscounting facilities introduced by the system made the call loan market less necessary, but the market remained useful and convenient to both borrowers and lenders, and it worked all the more smoothly.

And the Federal Reserve system has added another to the claims of New York to be the financial centre of the country. It has been found desirable to centralise the purchases and sales of securities by the twelve Federal Reserve Banks in the open market. These are purchases and sales partly of bank acceptances and partly of United States Government securities, and the market for both is centralised in New York.

The scientific use of open market assets as an instrument of credit policy by the Federal Reserve system dates from 1922. Credit expansion was started in that year by open market purchases, and checked in 1923 by open market sales, the variations in the New York rediscount rate being small.

In the summer of 1924 the credit contraction was found to be more severe than had been contemplated. The commodity price level had fallen, production declined, all the symptoms of depression appeared. Measures of credit relaxation were again resorted to. Open market

purchases were effected on a larger scale than in 1922, and the rediscount rate was reduced from $4\frac{1}{2}$ to 3 per cent. Depression was quickly dissipated, the commodity price level rose, and production revived.

It was at this point that a complication was introduced into the credit situation by the return of England to the gold standard, which ended the monetary isolation of the United States. The credit relaxation in the United States itself facilitated this step; it meant a depreciation of the dollar (and therefore of gold) relative to commodities and relative to the pound sterling.

But the return of England to gold was accompanied by measures of credit restriction on the part of the Bank of England. The monetary systems of England and America were now linked together by gold, and the purchasing power of gold was no longer determined by New York alone, but was the resultant of the credit policies of New York and London. New York continued the policy of credit relaxation, but found its control over the purchasing power of the dollar impaired by the contrary policy of high discount rates and credit restriction followed in London. In the two years, 1925-27, the expansion of business in the United States was to some extent checked. The commodity price level fell by 10 per cent. Industrial production did not appreciably increase, though the high level reached in 1925 was maintained in 1926 and 1927. The set-back hardly amounted to a depression, such as existed for a short time in 1924. Nevertheless the tendency was sufficiently adverse to justify further measures of credit relaxation. Since 1924 the rediscount rate had been low, but the Federal Reserve system had not maintained its open market assets at the high level of that year. In 1927 it reverted to extensive open market purchases, and initiated a renewed credit expansion.

For these measures the Federal Reserve Banks have been blamed by some American critics, who regard the credit expansion of 1927 and 1928 as the principal cause of the Stock Exchange speculation.

It is easy to show that the credit expansion did not

cause a speculation based, like those of pre-war days, upon inflated commodity prices. The rise in commodity prices was slight, and the index did not rise by more than 7 per cent. It recovered no more than a part of the fall which it had undergone since 1925. And even this rise was partly attributable to non-monetary causes, the index at the minimum (in May, 1927) having been depressed by the low price of cotton resulting from the abundant crop of 1926.

The relatively small response of the commodity price level to the credit relaxation in America may be traced to the continuance of a policy of credit restriction in Europe and particularly in London. The divergence of credit policy resulted in enormous exports of gold from the United States, the net loss of gold in the twelve months ended July, 1928, having been some \$500,000,000.

On the other hand, it must be admitted that the credit expansion was a cause of the speculation in the sense that the credit *contraction* which preceded it threatened to interrupt the prosperity of the country and therefore to reduce both dividends and share values. The index of manufacturing production having fallen from 101 in 1923 to 94 in 1924, recovered to 105 in 1925, but after reaching 108 in 1926 reacted to 106 in 1927. Had the Federal Reserve system acquiesced in the credit contraction which was then emanating from Europe, a more serious depression and decline of production would presumably have ensued. In fact, it would have been possible to prevent the speculation by preventing the prosperity which provoked it.

But that does not mean that the Federal Reserve Banks caused the speculation by an artificial interference with the course of economic events. On the contrary, it means that by just such an artificial interference they could have prevented it. For the prosperity which attracted the speculators was the result of unimpeded economic activity, and credit restriction would have interfered with it by curtailing demand, reducing profits below normal and damping down activity.

The credit relaxation of 1927-28 was no more than

enough to counteract the effects upon the American economic system of the credit restriction that prevailed in Europe. It permitted the resumption of that growth of production which had been interrupted in 1927. The index of manufacturing production recovered in 1928 to 111, and even so was only 10 per cent. above the level reached five years before.

But when the speculation is attributed to the relaxation of credit in 1927, what is meant is usually not that there was an inflationary expansion of demand in the commodity markets, but that the resources of the stock market itself were reinforced by the creation of credit. I have already shown above that this did not occur to any serious extent, in that the increase in brokers' loans was supplied mainly not by a creation of bank credit, but by the temporary lending of money, which had been saved out of income and would otherwise have been invested.

I have also shown that lending to speculators does not on balance increase the volume of credit, unless there results in some way an increase in the volume of securities to be carried by the market with borrowed money. This may occur through an excess of new issues, or a purchase of securities from abroad, or the withdrawal of speculative profits from the market to be spent as income. These processes depend on the speculation itself. The favourable market for shares attracts new issues, and the rise of prices of shares yields speculative profits. As to dealings with foreign investment markets, the speculative activity may cause an excess either of sales or of purchases according as the speculative mentality does or does not extend to these markets.

The offer of loans at low rates to speculators is not likely of itself to have any very marked effect upon the amount of money borrowed. For the charge for interest from day to day, even at very high rates, is small compared to the profits anticipated by the speculators. When, at a later stage, the policy of cheap money was abandoned, and discount rates were raised and call money rates raised still higher, the rate for call money occasionally rose to

12 per cent. But 12 per cent. per annum means only $\frac{1}{30}$ of 1 per cent. a day. When speculators are accustomed to look for profits of 2 or 3 or perhaps 5 or 10 per cent. in a day or two, the deterrent effect of such a charge for interest is negligible, and the stimulative effect of a low charge consists in nothing more than the absence of this deterrent effect.

On the other hand, it must be understood that these considerations apply only to the direct effects of cheap or dear call money upon the speculators. The rate of interest is not the only instrument available to the banks for regulating credit. Every bank must exercise a certain discretion in granting, refusing or limiting loans to customers, and in prescribing the character and extent of the security to be required. A definite refusal or limitation of accommodation will obviously reduce the scope of a speculator's operations; it simply over-rides his expectations of profit however sanguine. A concerted limitation of loans to speculators by the banks may thus reduce the resources with which they are able to back their opinions.

IX. CREDIT RESTRICTION, 1928-29.

On the 3rd February, 1928, the New York rediscount rate was raised from $3\frac{1}{2}$ to 4 per cent. On the 18th May it went up to $4\frac{1}{2}$, and on the 13th July, 1928, to 5. That was the highest rate that had been imposed since 1921. There were at the same time open market sales of securities. The Government securities held by the Federal Reserve system, having stood at the very high level of \$600,000,000 in January, 1928, were reduced to \$400,000,000 in February, and to \$219,000,000 at the end of May.

These drastic measures of credit restriction were undoubtedly adopted partly on account of the outflow of gold and partly on account of the Stock Exchange speculation. The preceding credit relaxation had been intended both to correct the set-back in trade that had occurred in America, and to facilitate economic recovery in Europe. In exporting \$500,000,000 of gold, the United States might claim to have done enough for Europe for the

time being. And the recovery of trade at home had brought with it the intensification of the speculation.

In August, 1927, when the rediscount rate had been reduced from 4 to $3\frac{1}{2}$ per cent., the index of industrial stocks and shares was 112.3 (1926 being 100). By April, 1928, it had risen to 149.5. Brokers' loans had risen from \$3,184,000,000 to \$4,282,000,000 in the same period.

It may be argued (I think rightly) that speculation in itself, apart from any disturbance in the region of money or credit, is no concern of a central bank. But, of course, speculation does bring with it a tendency to inflation, which it is the duty of the central bank to counteract. And in 1928 American opinion was inclined to press strongly for action of some sort. In the first place, it was thought that excessive speculation would build up a technically unsound position. If banks granted loans secured on stocks and shares reckoned at market values which were much too high and bound to fall heavily, the loans might prove in the end to be insufficiently secured. The banks would be embarrassed by bad debts, and some might fail.

The Federal Reserve Banks, when they rediscount for the member banks, sometimes receive Government securities as collateral, but sometimes they have to rely on the signatures on the paper rediscounted. Of those signatures that of the member bank will usually be the only one known. At any rate the credit of the member bank would ordinarily be regarded as essential to the credit of the paper. Therefore a Federal Reserve Bank cannot disinterest itself in the solvency of its member banks, and is quite within its rights in preventing practices which appear to endanger their solvency.

It was maintained at the time that the Federal Reserve Banks ought not to allow member banks to use the funds obtained by rediscounting to finance speculation. So stated the contention was hardly defensible. It is impossible to say from what source the funds used by a member bank for any particular purpose are drawn, whether from its deposits, from its rediscounts or from its own capital. But a Federal Reserve Bank might quite reasonably say

that a member bank which used *any* of its resources to grant unsound or insufficiently secured loans to speculators should not be allowed to have its paper rediscounted.

As has already been mentioned, the banks required a high percentage of margin, and this practice was no doubt partly due to the wise influence of the Federal Reserve Banks.

But a minor safeguard of this kind did not satisfy critics. The gambling mania excited moral reprobation. The spectacular gains made by some of the speculators were constantly exciting the cupidity of others. People of all classes, rich and poor, were led to risk more than they could afford. And it may well be that towards the end (especially during the final spurt in July-September, 1929), prices of shares were forced up all round by the bidding of people who were using their resources to back nothing more substantial than a continuance of the good luck which had brought big gains to their neighbours.

It was also argued that the speculation was diverting to the Stock Exchange funds that were needed in trade and industry. That does not mean that idle cash was locked up in the Stock Exchange. No more perfect system of economising idle balances could be devised than that of daily settlements and call loans which prevails on the New York Stock Exchange. If there is any idle money there, it is no more than the minimum balances stipulated for by bankers as part of their remuneration for carrying the brokers' accounts.

When it is said that money was diverted to the Stock Exchange, what is meant is that the Stock Exchange was securing an undue amount of *bank advances*, and that trade and industry were compelled to go short. The statistical evidence already quoted shows that the accommodation received by the Stock Exchange from the banks was not in fact excessive. But in any case, the idea that money lent to the Stock Exchange is withheld from trade and industry is fallacious. The money so lent is used directly or indirectly to carry new issues, and the new issues are a channel for financing the production of capital goods.

The result may, it is true, be an increase of external investment. But that did not occur in the great Wall Street speculation. The speculators were interested in American issues, new and old, and far from American money flowing into foreign markets, foreign money came to New York. The net foreign purchases of American securities are estimated as follows by the Department of Commerce :—

	\$ Millions.		\$ Millions.
1926 . . .	127	1928 . . .	488
1927 . . .	252	1929 . . .	457

A part of these were, no doubt, bought with borrowed money, but at the same time the loans to brokers included a certain amount of foreign money.

There were thus many reasons, good and bad, why the Federal Reserve Banks should be expected to do something to check the speculation. For this purpose they relied on the short-time rate of interest. Not only was the rediscount rate put up, but pressure was put upon the member banks in New York to restrict loans to the Stock Exchange. The result was seen in a disproportionate rise in the rates both for call money and for time loans to brokers. The comparison (Table A, p. 75) shows what happened.

The rise in both call and time rates on loans to brokers was much greater than the rise in the rediscount rate. Call money had usually been from $\frac{1}{4}$ to $\frac{3}{4}$ per cent. above the rediscount rate (1924 was exceptional). The spread became wider and wider as can be seen in the quarterly averages shown in Table B, page 75. The disproportionately high rates on loans to brokers imply discrimination against them. Had the banks been willing to take advantage of the source of profit offered, they would soon have brought rates down to a competitive level.

The New York rediscount rate, having been raised to 5 per cent. in July, 1928, was not further raised till August, 1929. But in the interval, certain steps were taken which materially altered the usual relation of the discount market to the rediscount rate.

It is the practice of the New York Federal Reserve Bank to offer to buy acceptances in the market at a rate publicly announced, which is usually about $\frac{1}{2}$ per cent.

TABLE A.

	Call Loans.	Time Loans.	Rediscount Rate.
1923 . .	4·85	5·17	4·46
1924 . .	3·08	3·75	3·67
1925 . .	4·20	4·27	3·46
1926 . .	4·50	4·61	3·84
1927 . .	4·06	4·34	3·79
1928—			
January .	4·24	4·38	3½
February .	4·38	4·56	4
March .	4·47	4·63	4
April .	5·08	4·94	4
May .	5·70	5·25	4½
June .	6·21	5·69	4½
July .	6·05	6·00	5
August .	6·87	6·25	5
September	7·26	7·00	5
October .	6·98	7·13	5
November	6·67	6·93	5
December	8·60	7·38	5
1929—			
January .	7·95	7·75	5
February .	7·06	7·63	5
March .	9·10	7·88	5
April .	8·89	8·75	5
May .	8·91	8·75	5
June .	7·70	8·13	5
July .	9·23	7·75	5
August .	8·23	8·88	6
September	8·50	8·88	6
October .	6·43	8·80	5
November	5·44	5·38	4½
December	4·83	4·88	4½

TABLE B.

	Call Money.	Rediscount Rate.	Difference.
Quarter to March, 1928	4·36	3·8	·56
„ June, „	5·66	4·3	1·36
„ September, „	6·73	5	1·73
„ December, „	7·42	5	2·42
„ March, 1929	7·74	5	2·74
„ June, „	8·50	5	3·50
„ September, „	8·65	5·6	3·05

below the rediscount rate. As the acceptances are bought in the open market, credit is created without any of the deterrent effects of rediscounting for member banks, which are reluctant to be indebted to the Reserve Bank. The amount of acceptances held by the Federal Reserve system always tends to rise to a maximum at the turn of the year. In December, 1928, it rose to the unusually high figure of \$483,000,000. This compares with \$378,000,000 in December, 1927, and \$385,000,000 in December, 1926.

The effectiveness of the restrictive measures was being impaired. Early in January, 1929, the acceptance buying rate (90-day bills) was raised from $4\frac{1}{2}$ to $4\frac{3}{4}$ per cent., and on the 21st January to 5 per cent., the same as the rediscount rate. On the 15th February, it was raised $\frac{1}{8}$ per cent. higher, and in March to $5\frac{3}{8}$, and then to $5\frac{1}{2}$ per cent. Instead of being $\frac{1}{2}$ per cent. below the rediscount rate, it was $\frac{1}{2}$ per cent. above it.

The acceptances held by the Federal Reserve Banks fell from \$483,000,000 in December, 1928, to \$156,000,000 in April, 1929, and thereafter to \$75,000,000 in July, 1929. At the same time United States Government securities were sold, reducing the holding from \$263,000,000 in December, 1928, to \$165,000,000 in April, 1929, and \$147,000,000 in July, 1929.

There had been some difference of opinion within the Federal Reserve system. The New York Bank wished to raise the rediscount rate, while the Federal Reserve Board refused its consent. The rise in the acceptance rate was a compromise, but was quite as effective. The market rate for commercial paper rose to 6 per cent.

When at last the rediscount rate was put up to 6 per cent. (9th August, 1929), the acceptance rate was put down to $5\frac{1}{8}$, and the resultant effect was rather a relaxation of credit than a further restriction. By the 16th October, the acceptances held by the Federal Reserve Banks had recovered from \$75,000,000 (July) to \$360,000,000, which was above rather than below normal for the season. On the other hand, the holding of United States Government securities was lower than ever at \$137,000,000.

X. THE REACTION IN BUSINESS, 1929.

Meanwhile, credit restriction had at last begun to produce its effect on the state of trade. As invariably happens at a time of great industrial activity, there was an interval of several months before the restrictive policy adopted in the summer of 1928 became fully operative. So long as producers are working through existing commitments, activity continues. It was not till July, 1929, that there were signs of a set-back.

From the return of England to the gold standard in April, 1925, till the middle of 1928, there had been a conflict of credit policies between New York and London. New York had been consistently relaxing credit and London restricting credit. The restrictive policy had on the whole gained the day till the beginning of 1927, and thereafter for a time the policy of relaxation predominated. But over the whole period the two policies balanced one another, and at the end of it British industry was in much the same state of depression and American industry in much the same state of activity as at the beginning.

The vital significance of the transition of New York to the policy of dear money and credit restriction in 1928 was that thenceforward the two great credit centres were no longer pulling against one another; they were pulling in the same direction.

The American index of manufacturing production reached a maximum of 127 in June, 1929. By October it had fallen to 119. The set-back was especially felt in the steel, motor car and building industries, the two former of which were speculative favourites.

It had, no doubt, been the purpose of the dear money policy to discourage speculators by charging them high rates on call loans. But so long as business was prosperous, the speculators were quite impervious to any such deterrent. The dear money policy accomplished its purpose in the end. It stopped speculation by stopping prosperity.

Prosperity had not been built on inflation, but it could be checked by deflation, and deflation had at last been successfully inaugurated. It is characteristic of deflation

that it takes a persistent and possibly prolonged exercise of credit pressure to start it, but, once started, it proceeds by its own momentum. If the credit pressure is continued after the deflation has begun, the effect is to intensify the deflation and to aggravate the resulting depression.

In October, 1929, people were hardly contemplating the possibility of a depression of extreme severity. But any noticeable set-back was enough to affect the speculators. The speculative rise had brought the industrial share index up to 192 at the beginning of 1929, and there had then been a pause. It was not till July that the increased prosperity of industry started a further spurt. By that time the set-back to trade was already beginning, and when the industrial share index rose to 218 (end of September, 1929), concurrently with a palpable decline in prosperity, it became obvious to many that the speculation, whatever the position had been before, had got out of touch with the facts.

XI. THE COLLAPSE.

In October the reaction began. Minor reactions had occurred from time to time during the progress of the great speculation. But this time there was more force behind it. On the 24th October, for the first time reaction took on the aspect of panic. The volume of dealings far surpassed all records. The industrial share index fell to 180.5. Markets in some securities broke down. They became for the moment unsaleable. All the characteristics of a panic appeared, and continued spasmodically for three weeks. The industrial share index fell to 134 in the middle of November. On the 13th November, a date intermediate between the weekly calculations of the index, it is estimated to have been 124.

The big margins demanded by the banks for collateral loans did not in themselves prevent forced sales, for depreciation quickly reduced the margin below the high standard exacted. But banks showed some forbearance in regard to additional margin, and powerful syndicates were formed to keep the markets in important securities alive by offering to buy at prices that seemed safe. In

the four weeks from 23rd October to 20th November, brokers' loans fell from \$6,633,000,000 to \$3,587,000,000, the loans from others than banks falling from \$3,823,000,000 to \$2,031,000,000.

There followed a period of recovery. The industrial share index rose to 146.9 for December, 1929, and steadily progressed up to 170.8 for April, 1930. But the recovery turned out to be delusive. The stock market was dependent upon the industrial situation, and the industrial situation was dependent upon the monetary situation.

The high Bank rates in New York and London were, it is true, immediately reduced. Nevertheless they still remained in December, 1929, at $4\frac{1}{2}$ and 5 per cent. respectively. At a time when depression had quite clearly supervened, these rates must be counted very high and severely deterrent. A Bank rate must always be judged by the circumstances in which it operates. At a time of activity and rising prices 6 per cent. or 7 per cent. may fail to deter. At a time of depression and falling prices, 3 or 2 per cent. may be deterrent.

In December, 1929, the future course of trade was trembling in the balance. A severe depression threatened in consequence of the credit restriction imposed for the preceding eighteen months, reinforced by the tremendous psychological shock of the stock market collapse. To avoid the depression, or at any rate to mitigate it, an immediate transition to credit relaxation and cheap money was urgently called for. But it was not till the 6th February, 1930, that the London Bank rate was reduced to $4\frac{1}{2}$ per cent. and the New York rediscount rate to 4, and it was not till May, 1930, that the two rates were reduced to 3 per cent.

By that time the set-back in trade in both countries, and indeed almost throughout the world, had become grave. The American index of production stood at 107 in April, 1930. British unemployment had risen from 1,203,000 in September, 1929, to 1,760,000 in April, 1930. And the situation was becoming rapidly worse. It had in fact passed beyond the point at which low discount rates could of themselves start revival.

The depression has been attributed by many to the Stock Exchange crisis, on the ground partly of pessimism induced by disappointment and heavy losses, partly of the direct destruction of spending power. That there were repercussions in both ways is true enough. But pessimism on the Stock Exchange need not necessarily spread to industry, and in this case pessimism (or at any rate, a check to optimism) in industry had already spread to the Stock Exchange. In so far as the pessimistic influence did revert to industry, it was mainly because industrialists feared the destruction of spending power. When the prices of stocks were high, the speculators were rich. When prices collapsed, they became poor.

The *income* received from the stocks remained the same. The spending power that was affected was the capital value. But the capital value of a stock can only be realised in the form of spending power if the holder sells it or borrows on it. If he sells it, no additional spending power is created except in so far as the buyer borrows the purchase money. And even borrowing only transfers spending power and does not create it, unless the lender is a bank. The only reduction of spending power that occurred therefore was through the diminished borrowing on stocks and shares *from banks*. But as I have shown above, the bank loans on stocks and shares actually increased after the crisis.

That spending power did shrink is beyond dispute, but the cause was not the Wall Street crisis. The shrinkage of spending power and the Wall Street crisis were both effects of a common cause, the credit contraction towards which the Federal Reserve System and the Bank of England had been directing their combined efforts. The Wall Street crisis only intensified the depression through its psychological effects.

XII. FEDERAL RESERVE POLICY.

Much controversy has been aroused as to the proper functions of a central bank when faced with an inordinate Stock Exchange speculation. Apart from the moral condemnation of gambling as a vice (a matter which hardly

concerns a central bank) the central bank is only concerned with speculation as a possible cause of inflation. Up to July, 1929, when the reaction in industrial activity first began to be felt, the Federal Reserve Banks can hardly be accused of having done more in the direction of preventing inflation than the circumstances required. Even up to September, 1929, the speculative fever was continuing, and a relaxation of credit might still have caused inflation. The mistake of the Federal Reserve Banks was in their hesitation to lower rates and relax credit after the crisis of October had broken out. That was the moment when prompt action was needed to prevent pessimism getting hold and the vicious circle of deflation being joined.

Perhaps the severity of the depression that followed was due rather to conditions in London than to those in New York. British industry was already in a state of grave depression when it had to face the advance of Bank rate to $5\frac{1}{4}$ per cent. in February, 1929, and to $6\frac{1}{2}$ in September, 1929. Pessimism was spreading over the world from a deadly centre of infection. And if New York was slow in reducing the rediscount rate after the crisis of October, it can plead that London was as slow, and that till March, 1930, the Bank of England's rate remained $\frac{1}{2}$ per cent. above that of the Federal Reserve Bank of New York.

Suppose that credit had been relaxed as soon as the set-back in industrial activity had appeared in July, 1929, and that the tide of prosperity in the United States had continued to flow undiminished, though still with no rise of commodity prices. What would have happened? The speculative rise of stocks and shares could not go on for ever. If it had not been stopped by the reaction in trade and industry, it might have continued some time longer and carried prices higher still. But eventually it must have stopped, and once it stopped, the prices of stocks and shares would be bound to fall. If speculators could no longer count on one another's bull operations to prolong the rise, prices would necessarily be brought to the test of actual prospects, and inflated values would subside. Then, it will be said, a crash would still have been

inevitable. No doubt. Illusions once dispelled, margins would melt away and forced sales would bring prices down even below the level that prudence would require.

But, had industrial prosperity continued unabated, the crash need not have been so violent. Intrinsic values of shares would have remained high, and, if market values were unduly low, buyers would soon be found to correct them.

A crash may have been inevitable, and, that being so, it may have seemed desirable to hasten it and get it over. But it was not desirable to hasten it by methods that would *make it worse*.

It has been argued that the Federal Reserve Banks were bound to interfere with the speculation because the high price level of stocks and shares was itself a form of inflation, whatever happened to the price level of commodities. This argument is perhaps a natural inference from Professor Irving Fisher's Equation of Exchange, in which transactions in stocks and shares are included along with transactions in commodities. But it is nevertheless fallacious.

Inflation, when it occurs, does undoubtedly raise the prices of shares. The prices of shares are compounded partly of the market's expectations of future profits and partly of the number of years' purchase at which the market will buy an annual sum. Inflation raises the estimate of future profits by raising the prices of the things to be produced. It also raises the replacement value of capital assets.

But a rise in the prices of shares due to *other* causes than an actual or prospective rise of the money value of the product or of the capital assets, has nothing to do with inflation. It must either be due to an increase in the appropriate number of years' purchase (a fall in the long-term rate of interest) or to an increased prospect of profit in the existing conditions of prices. The expectation of profit may be well or ill founded, but on the assumption made, it is not inflationary. The man who buys a share at a price above its fair value suffers in just the same way as if he bought a commodity at a price above its fair value. He has simply miscalculated and made a bad bargain.

When there is inflation, the value of money does actually fall, and the *fair* value both of commodities and of shares in terms of money rises in proportion.

Apart from new flotations and the withdrawals of speculators' profits as income, dealings in stocks and shares are no more than exchanges of existing capital assets between one holder and another. The prices at which they are dealt in are of no consequence to any one except those who buy and sell them.¹ What one man loses, another gains. The individual changes of fortune may be great, but they have no more economic significance than those which arise from baccarat or betting.

The economic importance of the stock market arises, as has been shown above, from the new issues (and in a lesser degree from the speculators' profits). The volume of new issues and the terms on which they are made are matters of first-class economic importance. Through them inflation or deflation may make itself felt. But if so, the result is at once recorded in the *commodity* markets and the state of industry. It is quite unnecessary to appeal to the price level of shares as a criterion.

The amount spent on capital outlay depends on the amount of investible savings coming into the market, *plus* the net increase of bank advances to the stock market (or for capital outlay through other channels). This sum is in itself quite independent of the prices of shares. It may be applied in the first instance to the purchase of shares, but the prices of the shares make no difference to the amount of the sum available. That is the sum, whether it buys more shares or less, which comes into the possession of the sellers, and becomes available, directly or indirectly, for capital outlay.

Thus in so far as it is the business of a central bank to counteract monetary inflation, it can confine its attention to the commodity markets. It is there and there alone that monetary inflation will make itself felt, whether it starts from the Stock Exchange or from any other origin.

¹ Strictly speaking those who borrow and lend on the security of stocks and shares ought to be included.

CHAPTER III.

CONSUMERS' INCOME AND OUTLAY.

IF the method of monetary analysis through consumers' income and consumers' outlay¹ is to be securely founded, it is necessary to arrive at precise definitions of these two concepts. It is the purpose of this chapter to define them, especially by clearing up doubtful and borderline cases.

About consumers' income there is no mystery. It is simply the total of incomes expressed in money.

Why, it may be asked, give this name to what is commonly called the national income? But national income is too narrow; it would apply only to the total of incomes of a *nation*, whereas for the purposes of monetary analysis we may require the total for *any* group, whether it be a nation or something larger or smaller or different.

The main reason for selecting the expression *consumers' income* is that we require a correlative of consumers' outlay. Consumers' outlay is the total spent out of incomes. Such phrases as "total of money incomes" and "total of money outlays" would not serve our purpose, for money outlays would normally be understood to include any kind of expenditure, whether out of income or not. The total of money outlays would be an equally appropriate name for Professor Irving Fisher's total of transactions. But if we qualify it by reference to the consumers, and call it the total of consumers' money outlays, then it is clear that we mean to limit it to expenditure out of income.

The full phrase "total of consumers' money outlays" would be cumbersome. Moreover, while income may be either

¹ See my *Currency and Credit*, chap. iv. I have freely employed the same method in the later portions of the present volume.

real income or money income, outlay necessarily means money outlay, and the word money can therefore be dropped out. In "total of consumers' outlays," the word "total" likewise seems superfluous. The phrase can be shortened to "consumers' outlay" without modifying the sense. The outlay in the singular of consumers in the plural is necessarily a total. Once we have arrived at so handy a phrase as consumers' outlay, there are obvious advantages in using the corresponding expression, consumers' income, rather than "total of money incomes," or "money income stream" or any variant of these.

The guiding principle in defining the twin concepts will be that consumers' outlay comprises only outlay *out of income*. Consider first the case where there is no ambiguity as to what constitutes income. A man is receiving remuneration for work he does, or a fixed income from interest, rent or pension. An income may be spent on consumable goods. But it may also be spent in part on investment, the purchase of capital assets or of rights in capital assets in the form of shares, debentures, mortgages, etc. And the consumable goods will include, besides those like food, which are destroyed by the act of consumption, others of greater or less durability. The more durable consumable goods approximate in character to capital assets. The purchase of a house is an investment in a capital asset, and articles of furniture, jewellery, etc., may outlast a house.

If any one sells a capital asset or any commodity previously bought out of income, he receives money for it, and it is not possible to distinguish this money, when it comes to be spent or invested, from that received as income. It cannot be assumed that any particular items of outlay can be identified as having been bought out of this money. When a consumer receives any money which is not to be counted as income, we can only arrive at his outlay *from income* by deducting an equal sum from his total outlay.

When he sells anything which he has previously bought, he may be regarded as to that extent *undoing* the outlay applied to it. The proceeds of sale are *negative* outlay. If he sells to another consumer, the same transaction will

be positive outlay to the purchaser, and the net result will be no outlay at all, till the seller comes to spend the proceeds of sale. If such goods are sold to a trader, the outlay by consumers on purchases from the trader will be a net amount, arrived at by setting off his purchases from some consumers against the gross purchases of others from him.

Sums of money received by consumers which are not to be counted as income we will call "extraneous" receipts. Extraneous receipts will be treated as negative outlay, so that the consumers' outlay over any interval of time in which there have been extraneous receipts will be a net amount arrived at by deducting a sum equal to the extraneous receipts from the total outlay. The outlay thus deducted we will call "extraneous outlay." Extraneous outlay is not a set of identifiable items of expenditure, but is a deduction to be made from outlay as a whole in the interval of time concerned.

Extraneous receipts will include the proceeds of sale of any capital asset, securities as well as commodities. They will also include sums borrowed, except sums borrowed from *banks*, a special case to which we shall refer presently. When a consumer borrows money, he may be regarded as "selling" his own obligation to repay the money. To the lender the obligation is a capital asset or investment, and forms an item in his share of the consumers' outlay. To the borrower the money is negative outlay.

Two people have incomes of £1000 a year each. In a certain year one borrows £100 from the other. The borrower spends £1100 and the lender £900. Nevertheless the consumers' outlay attributable to each is £1000, because £100 of the borrower's expenditure is not out of income, while the lender has spent £100 out of income on an investment, in addition to the other £900.

When a loan comes to be repaid, the borrower may be regarded as buying back his debt, and the lender as disposing of an investment. The repayment, being out of income, is consumers' outlay to the borrower, but it is an extraneous receipt to the lender.

Other examples of extraneous receipts are gifts, bequests,

inheritances and gambling gains. But of course it is only when received in *money* that they have to be classed as extraneous receipts. A bequest or gift of securities or property does not disturb the outlay of the beneficiary. But should he at any time sell any possessions so acquired, the proceeds will be an extraneous receipt, though the outlay he is "undoing" is not his own, but his predecessor's.

Extraneous receipts might be described as receipts on capital account. But extraneous outlay cannot be described as expenditure on capital account. On the one hand savings out of income are applied to acquire capital assets, and on the other it happens not only to the spendthrift but occasionally to the prudent man that capital assets have to be realised to pay for current expenditure.

Any difference between the income and outlay of an individual consumer over an interval of time is reflected in his cash balance. Cash¹ here includes bank deposits. Theoretically it would be possible to limit cash to currency, and to treat a deposit in a bank as an "investment" and therefore as an object of outlay. But a deposit, especially one on current account, is acquired only in order to be parted with. It is held not at all as an investment but as a means of payment.

Time deposits cannot be classified quite so confidently. Deposits in savings banks or savings departments of commercial banks are usually intended to be investments, the right of withdrawal being exercised in much the same sort of circumstances as would lead to a sale of investments. But time deposits in a bank of which the main business is receiving deposits on current account subject to cheque, are probably intended to be withdrawn again after a short interval, and the dividing line between demand deposits and time deposits is sometimes very hazy. The balance of advantage is in favour of treating all deposits at such banks as cash. Money placed on time deposit is therefore to be

¹ "Cash" is not usually employed as a technical term in monetary theory. In ordinary usage its special significance would seem to be the means of payment *ready for use*.

regarded as withheld from outlay, not as spent on an investment. When it is withdrawn and spent, the spending is to be regarded as consumers' outlay, not as extraneous outlay.

Since we do not treat the acquisition of a deposit at a bank as outlay on an investment, so we do not treat an advance from a bank as an extraneous receipt. We regard it as an anticipation of income. Thus when a consumer with an income of £1000 a year borrows £100 from his banker in a certain year and spends £1100, we regard the whole £1100 as consumers' outlay. If he started with no credit balance, he ends the year with his cash balance a negative quantity of £100.

There is a justification for this difference of treatment as compared with that of a loan from one consumer to another. For the bank, unlike the consumer, does not have to draw on a definite cash holding to make the loan, but *creates* the cash in the form of its own obligation.

The consumer's cash balance at any time, whether positive or negative, is equal to the excess of his income over his outlay up-to-date. It is strengthened by extraneous receipts in just the same way as by additional income, but the extraneous receipts are offset by the equivalent extraneous outlay.

When the consumer has a credit balance and draws upon it, outlay exceeds income by the amount so drawn. This amount represents past income. When he incurs a debit balance, the outlay represents future income. When he pays off a debit, this does not count as outlay.

Since extraneous receipts count as negative outlay, the consumers' outlay for an individual in an interval of time may easily be a negative quantity. That is to say, his cash balance may be increased by more than the amount of income he receives in the interval.

When a consumer receives credit from a trader from whom he buys, we treat him not as anticipating income but as obtaining an extraneous receipt, just as if he had borrowed money from the trader. Book debts due to the trader are included as assets in the trader's working capital. It is

only when the purchaser actually pays that the purchase becomes part of the consumers' outlay.

It might be supposed that consumers' income, being essentially *money*, should exclude income paid in kind. But that is not so. A payment in kind is better treated as combining both income and outlay in a single transaction. If a butler receives board and lodging as part of his remuneration, there arises a twofold demand, firstly, for the services rendered by the butler, and secondly for the goods consumed by him, just as much as if he received payment for the former and paid for the latter. Only, receipt and payment being simultaneous and equal, no cash actually passes. We have to assume that all payments in kind are valued at the prices of the day. The valuation may be hypothetical, but is legitimate enough. Consumers' income is not income *received* in money, but income *expressed* in money.

I turn next to the trader, using the term in a wide sense to include any one, whether a producer or a dealer in commodities or in securities, etc., who makes his income in the form of profit.

Profit is the difference between costs and selling price. It is characteristic of the trader that his business involves expenditure by way of costs, so that his income is only a fraction of his gross receipts. His expenditure and gross receipts constitute his "turnover," and his net receipts constitute his income.

The costs will be composed partly of purchases from other traders, and partly of payments of wages, salaries, interest, etc., to those who contribute, by their services or by their property, to the production or handling of the goods traded in.

There are borderline cases between the trader who receives profit and the recipient of salary, wages or interest, whose entire receipts are income, without any deduction for costs, e.g. professional men who spend money on office accommodation and clerical or technical assistance, or landlords who incur expense in maintaining and managing their property. We need not consider which of such doubtful cases should be classed as traders. An absolutely rigorous division is not necessary.

A trader's costs are incurred in advance of his receipts. At any moment of time he has incurred a certain amount of expenditure which has not yet borne fruit in sales of his product. This expenditure is met from his *capital*.

The provision of capital for a business is an investment, the acquisition of which out of income is originally part of the consumers' outlay. But the capital once provided, disbursements from it are no longer consumers' outlay. They are analogous to what we have called extraneous outlay. When the sums disbursed are replaced out of sales, they are analogous to extraneous receipts.

The capital of a business includes a cash balance, which is indeed a necessary means of carrying on the business. The costs are paid for out of the cash balance, and the receipts are credited to it. The cash balance of a business differs from the cash balance of an individual in that it is an object of investment. The provision of funds out of income to create or strengthen the cash balance of a business is a part of the consumers' outlay.

A trader's business requires a cash balance only because it involves expenditure on costs. If the whole of the receipts of an occupation are income, they can be credited to the personal cash balance of the recipient, without the intervention of a business balance. We might almost have defined traders as those who require separate cash balances for business purposes. But in practice this would not be applicable without exceptions.

Where a business is carried on by a company or a partnership, the cash balances of the business are bound to be kept formally separate from the private balances held by the proprietors of the business in their capacity as individual consumers. Where a business is carried on by one man on his own account, he will very likely keep his private balance separate from his business balance, but this is not necessarily so. He may have a single balance into which he pays all receipts and out of which he pays both the expenses of the business and his own personal expenditure. Usually in such a case we can regard the balance as belonging to the business. Over any interval of time the income

derived from the business may be treated as spent on investment in the business, while the proprietor's personal expenditure is provided by capital withdrawn from the business. The investment in the business is consumers' outlay, while the withdrawal of capital is an extraneous receipt or negative outlay, and the personal expenditure again is consumers' outlay. The net result is that for the proprietor consumers' outlay is equal to consumers' income, as it must be when we suppose his cash balance to be invariably *nil*.

In what is, nowadays at any rate, the more normal case, where a business has cash balances separate from those of its proprietors, the proprietors, whether shareholders or partners, will draw out so much of the profit as it may be decided to distribute, but the *whole* of the profit belongs to them, and any undistributed residue is part of their incomes. If the residue is kept in the business and credited to reserve, it is income invested in the business, and counts accordingly both as consumers' income and as consumers' outlay. If on the other hand the profits do not suffice to pay the dividends declared, and money is drawn from reserve, the sum so drawn is not income but is an extraneous receipt.

It may be difficult to say exactly what the true income derived from a business in an interval of time is. In the first place the proper allowance for depreciation is a matter of opinion; it depends on a forecast of the rapidity not only of wear but of obsolescence.

Secondly, there are problems arising from the valuation of stock-in-trade. If the stock-in-trade remains unchanged in quantity, but prices change, there will be a gain or loss, which may be taken into account in the valuation of the stock for balance-sheet purposes, and so in the calculation of profits. But this gain or loss ought *not* to be taken into account in calculating consumers' income or outlay. The stock is part of the necessary capital of the business. If it is to be kept intact, the profit that could be made by selling off all or part of it at any moment is hypothetical. The income derived from the business is to be arrived at from the proceeds of the goods sold during the interval and the

costs incurred in replacing them and so maintaining stocks unchanged. Everything produced will thus be accounted for, on the side of costs when it is actually in course of production, and on the side of receipts when it is actually sold. All valuations at other times are hypothetical estimates.

This would be a perfectly adequate solution of the problem if stocks were in fact kept, always unchanged. But in practice, even if there is a normal which they tend to approach, the stocks held by any business are susceptible of very considerable variations.

So long as a trader is producing in response to orders or forward contracts at agreed prices, there is a definite and ascertainable profit to be credited on his output, and he can reckon his income accordingly. But if he is producing for stock, or if he is not a producer but a dealer, whether wholesale or retail, who buys without knowing precisely at what price the future state of the market will allow him to sell, the profit on any goods acquired in excess of current sales can only be estimated.

Any trader whose sales are not keeping pace with his output or his purchases finds that his receipts are not keeping pace with his disbursements. He must pay for the difference by the release of cash from his balance, which forms part of his capital. If the cash balance is insufficient, he must strengthen it, and if we leave out of account for the moment the possibility of his strengthening it either by receiving credit from other traders, or by the sale of something other than the product in which he is trading, he must do so by *borrowing from a bank*. When banks create credit by granting increased advances to traders, this is for the purpose of enabling the traders to release cash. On the other hand, a trader who has accumulated a substantial balance of cash on time deposit, can release cash without borrowing. Similarly when a trader's receipts outstrip his disbursements, he absorbs cash. Either he repays bank advances or his balance is increased.

When cash is released it is paid away in the form of costs, partly the purchase price of materials or intermediate products from other traders, partly the wages and other

payments involved in the cost of manufacturing or of handling the goods. These payments are made in anticipation of the receipts from the sale of the product. The payments to other traders for materials or intermediate products go to provide the incomes of the people engaged in producing and handling these things, including the profits of the traders themselves as well as the wages, etc., paid by them. Therefore the *whole* of the cash released is devoted to paying the incomes of people concerned in producing or handling the goods that the trader is producing or buying.

But if he provides by his borrowing for all these incomes in anticipation of sales, may he not provide also for his own profit? The only reason against it is that the amount of his profit remains doubtful till the selling price of the product is settled. But probably in the case of a producer the price is settled beforehand. This is less likely in the case of a dealer whether wholesale or retail. But whether the price is settled or not, it may very well be that the trader will anticipate some of his profit by drawing it out of the business and borrowing to that extent more than is actually necessary to meet his costs. He is then receiving so much "on account" of a profit which is still incomplete.

To the question *when* the profit on any industrial or commercial activity accrues there is no certain or simple answer. The accruing profit lies hidden in the capital of the concern, and at any moment the precise amount of it is a matter of opinion and estimate. The proprietors or the shareholders receive sums based on the estimated amount of profit, and adjusted, it may be, to meet their convenience in the matter of regularity of income. So much profit as they do not draw out is left in the capital account, and must be reckoned as an investment of a part of their income. This invested residue may be of quite uncertain amount. To determine it exactly, we should have to assign a value to the unsold output. We should have to adopt conventions and hypotheses, such as are employed in the construction of a balance-sheet, though they can hardly be said to possess any scientific authority. This difficulty is inherent in the

very idea of income; and we cannot let it stand in our way in employing the idea. In practice we shall find that it need not do so.

Traders give credit to one another. The trader who gives credit for goods delivered to another is making a temporary investment of so much of his working capital with the other. The trader who receives credit is supplementing his working capital. The former is releasing cash and the latter is absorbing cash. The net result is therefore neither a release nor an absorption of cash, in contrast with the case of a bank advance which releases cash without absorbing it.

It may be difficult sometimes to say exactly from what moment credit is being given. In general we may say that payment may be assumed to be due at the moment of delivery. But that assumes that the producer or seller must necessarily finance the transaction up to the moment of delivery. That is not invariably so in practice. But here again exact definition is not necessary.

Traders also give credit to consumers. The trader who does so is making a temporary investment and releasing cash, and the consumer is absorbing cash, though the actual effect is to offset the release of cash by the consumer and the absorption by the trader that would otherwise occur. The consumer is acquiring an extraneous receipt as in any other case where he borrows otherwise than from a bank.

"Instalment buying" enables consumers to supplement the consumers' outlay with these extraneous receipts, so that the demand for goods exceeds the consumers' outlay. Later on, when the instalments are paid, the demand for goods falls short of the consumers' outlay.

If we take as a single group all the traders engaged in the supply of a particular kind of product, producers, transporters, wholesale dealers, retail dealers and others, including the producers of the raw materials and the dealers between one intermediate producer and another, we find that the incomes derived by all the traders in the group and those employed by them from the selected branch of economic activity are ultimately composed of the proceeds of sale of the finished product to the consumer. Each trader

receives payment from those a stage nearer the consumer than himself, and his costs consist partly in the payments for the labour and capital that he employs, and partly in payments to traders a stage further from the consumer than himself. The money received from the consumers may be compared to an irrigating stream, flowing to the traders at each successive stage, from the retailers to the producers of the raw materials. Every trader's cash balance is a reservoir from which the stream flows along income channels to those who contribute through their services or their property to the processes of production and distribution.

The trader from his reservoir of cash (supplemented if need be by borrowing) can release cash to provide an outflow of incomes (including his own receipts on account of profits) in excess of his sales. Or alternatively, if the outflow of incomes falls short of sales, he absorbs cash and can repay advances.

In the case of an individual trader, disbursements include not only the incomes of those contributing to the production or handling of the goods, but also the payments made to other traders for the purchase of materials or intermediate products or for services rendered. But if we turn to the group of all traders engaged in producing and dealing in a product, we find that all the receipts and payments between one trader and another cancel out, and we are left with the principle that in any interval of time the difference between the incomes derived from the group and the proceeds of sale of the finished products to consumers is provided for by an equal release or absorption of cash, as the case may require, by the traders of the group.

The practical application of this principle would be obscured by the difficulty of subdividing the incomes and balances of traders engaged in the production or handling of more than one commodity. But we can proceed to the more comprehensive principle, that if *all* the traders in a community be regarded as a single group, the difference between the incomes derived from industry and commerce as a whole and the proceeds of sale of the products to consumers is provided for by an equal release or absorption of

cash, accompanied presumably by such a decrease or increase in bank advances as may be required to keep cash balances at their normal level.

Now the incomes derived from the traders' businesses are a very large part of the entire consumers' income. They include all except (1) incomes paid by the State or by public authorities, and (2) incomes derived from the rendering of services which are themselves directly consumable.

As to the former, we regard the State and other public authorities (municipalities, etc.) as "traders" supplying law, order and administration to the taxpayers and receiving payment for these services. There are classes of public expenditure, such as interest on non-reproductive debt, pensions, etc., which are not made in consideration of any current services at all. But these payments may for our present purpose be regarded as part of the cost of Government, just as debenture interest is part of a trader's costs.

There remain "consumable" services. When a service is rendered direct to the consumer, e.g. by a domestic servant, the payment for it is an item in the consumers' income and a simultaneous and identical item in the consumers' outlay. It is only where a trader intervenes between the receipts from consumers' outlay and the payments of consumers' income that there is room for any difference between consumers' income and consumers' outlay. It rests with the traders to decide whether their disbursements in the form of incomes (including their own profits) shall keep pace with their sales, or whether they shall exceed them or fall short of them. It is for them on the one hand to increase productive activity and release cash, or on the other to contract productive activity and absorb cash. In the one case they will probably increase their indebtedness to the banks, and in the other reduce it.

Just as a consumer who borrows from a bank in order to release cash and increases consumers' outlay may be regarded as anticipating income, so a trader who borrows from a bank in order to release cash and increases consumers' income may be regarded as anticipating consumers' outlay, from which his receipts are derived.

In the long run the demand for goods is equal to the consumers' outlay. But the release or absorption of cash by the traders in any interval of time adds to this demand or subtracts from it.

The traders who release cash transform part of their working capital from cash into goods, and those who absorb cash transform part of their working capital from goods into cash.¹ The provision of goods for working capital makes demands on the productive activity of the community just as much as sales to consumers. It is a form of investment and when provided not by borrowing but out of income would be included in consumers' outlay.

Any variation in demand tends to bring about a change in price. When traders release cash, demand is increased at all prior stages of the industry concerned, and there is likely to result a rise of prices. Similarly, an absorption of cash, involving a decreased demand at these stages, is likely to cause a fall of prices. In either case there arises a discrepancy between the prices of the intermediate products concerned and the price received from the consumer for the finished product. These changes of prices affect the valuation of working capital, and also the division of the available income from profits among the traders concerned.

A variation in demand may originate in the sales to consumers. Suppose there is an increase in demand. The first effect is felt in an increased volume of retail sales. There follows an increase in orders to wholesale dealers and through them to producers. If the increase in demand is considerable and persistent, there will be a rise of prices. But this rise is likely to occur first in wholesale prices and prices of intermediate products and materials. And the same is true of the fall of prices, when there is a decline of demand. There thus occurs a discrepancy between wholesale and retail price levels.

The discrepancy is probably symptomatic of a discrepancy between output and sales. The producers raise

¹ They may use the cash for the provision of new *fixed* capital. In that case they convert working capital into fixed capital.

their prices when they have difficulty in keeping pace with the orders they receive, and they lower their prices when they have difficulty in keeping their plant fully employed. The result is that the change in output is less than in proportion to the change in sales, but that in the one case the producers secure additional profit at the expense of the retailers, and in the other the retailers secure additional profit at the expense of the producers. Eventually (unless the change in demand turns out to be temporary only) retail prices should be adjusted, and equilibrium between sales and output restored.

It may happen that the price of an intermediate product is raised, not on account of any increase in the demand for the final product or of any reduction of supply, but as a purely speculative movement, based on an expectation of future market conditions. Such a rise of price may occur as a result of increased purchases by the speculators, involving a release of cash with the consequences already described. But it may also occur as a result of speculative holders *restricting* their sales. In the latter case, the speculators make an increased profit on so much as they do actually sell, at the expense of the purchasers, and they also make a paper profit on the goods withheld from sale. If the paper profit is to be included in consumers' income, then the corresponding portion of the consumers' outlay must be regarded as invested, along with the actual cost of the goods, in the speculators' working capital. Alternatively the goods might be valued at cost, and the paper profit excluded from both income and outlay till it is actually realised on the sale of the goods. That is merely, once again, the question of the moment at which profits accrue.

The speculators may raise prices by buying forward. There is no release of cash till they have to accept delivery. Meanwhile, the forward sellers (whether they are producers or dealers) are in the position of gaining a profit from the higher price and lending this profit to the speculators. When a settlement comes, the profit materialises, and the speculator has to pay it.

There is a dual relation between consumers' income and

consumers' outlay, on the one hand through traders' cash balances and on the other through consumers' cash balances. Consumers' income can only exceed consumers' outlay if traders release cash equal to the difference. But it is equally true that consumers' income can only exceed consumers' outlay if the consumers absorb cash equal to the difference.

When the traders release cash and the consumers' income is increased, the immediate effect is to add the cash released to the consumers' balances. But presumably the consumers will spend or invest at any rate a part of their additional cash, and the result will be an increase in the consumers' outlay (not, in general, equal to the increase in the consumers' income). The increase in the consumers' outlay will mean an increase in the traders' sales, and will restore to their balances some of the cash they originally released. Each of the two groups, the traders on the one side and the consumers on the other, between which the cash of the community is divided, is in the position of unloading cash on the other.

The same situation might originate from a release of cash by the consumers. Consumers' outlay would exceed consumers' income, sales would increase, and traders would in the first instance absorb cash. They would then accelerate output and release cash, reducing thereby their net absorption. But it is more likely to originate with the traders, because they more readily regulate their cash by borrowing more or less from the banks.

The foregoing analysis applies just as much to the case where the traders (or consumers) absorb cash, and the consumers' income (or outlay) is reduced.

There can never be a release or absorption of cash in the community *as a whole*. To every receipt of cash there corresponds a payment, and to every payment there corresponds a receipt. A release of cash on the part of any person or group is simply an excess of payments over receipts. It necessarily implies an exactly equal absorption of cash by the rest of the community.

When any group is induced to release cash, whether by

credit relaxation, favourable market conditions or any other circumstance, the rest of the community finds itself in possession of surplus cash. Any one whose holding of cash is thereby increased beyond what he had intended or expected, is likely to get rid of a part of the excess, that is to say, to release cash in his turn. The release of cash spreads, and it continues to spread, with cumulative effect, so long as the people who absorb the cash released are not willing to retain it. Some of it comes back to the group which originally started releasing cash.

Eventually equilibrium is restored because the increase in consumers' income and outlay and in the turnover of money makes people desirous of absorbing cash. The restoration of equilibrium is apt to be delayed because increased activity of business itself stimulates the release of cash, leading both to the dispersal of idle balances and to increased bank advances. That is one of the causes of the inherent instability of credit.

Likewise when any group is induced to absorb cash, those who in the rest of the community find themselves losing cash will absorb cash to make good the deficiency. The absorption of cash spreads, till the reduction in consumers' income and outlay and in turnover makes people willing to release cash, and equilibrium is restored.

The original impulse to release or absorb cash, as the case may be, need not be confined to a group; it may extend to the whole community. If there were a universal desire to release cash, it would necessarily remain unsatisfied. For in so far as any part of the community succeeded in releasing cash, that would mean that the rest, despite their efforts, had actually absorbed cash. That is what happens when there is a "flight from the currency."

Consumers' outlay may substantially be identified with the demand for goods. All the sales from one trader to another are based on the anticipated sales to the consumer, from the proceeds of which the incomes of the traders and the labour and capital employed by them must ultimately be found. In the case of consumable goods this process is simple. But in the case of instrumental goods

or capital goods, there are certain complexities which need to be explained.

Some capital goods are purchased, like consumable goods, directly out of income, supplemented, if need be, by temporary borrowing. For example, a man may buy a house and pay for it out of income in two or three years. Or an industrialist may pay for improvements or extensions of plant out of undistributed profits.

The complexities of the capital market arise not in these cases, but in the system of raising funds by the issue of marketable securities, either shares or long-term or funded loans, such as are dealt in on the Stock Exchange. The purchase of such securities with sums saved out of income is a part of consumers' outlay. This is so, whether the purchaser is an individual consumer, or a trading concern. For, so long as the funds are provided *out of income*, the trading concern is the agency of its proprietors in disposing of a part of their income.

If a trading concern buys securities not out of accruing income but out of its existing capital, that is not part of the consumers' outlay. The original provision of the capital when it was placed in the concern ranked as an investment and as part of the consumers' outlay, and thereafter the change of the capital from one form of investment to another must not so rank again.

New issues of securities in the investment market are the means of providing funds for new capital enterprises. These funds constitute a demand for capital goods. But they are not necessarily themselves part of the consumers' outlay. The sums applied out of consumers' outlay to the purchase of securities are not laid out directly upon the new issues, they are placed in whatever securities the investors may select. It is a characteristic of the investment market that the private investor (the "consumer") is not merely a buyer, but operates as a seller also. Sometimes he enters the market as a speculator; buying for the express purpose of selling at a profit, he assumes for the time being the attributes of a trader. Sometimes, in order to take a favourable opportunity of acquiring some shares

or other capital assets, he will sell some of his existing investments, or anticipate future savings by borrowing. Occasionally he will sell an investment merely because he thinks that for the moment it is over-valued in the market, and he can reinvest the proceeds more favourably. Traders who are not themselves dealers in the investment market will often invest capital not immediately needed for their own business in marketable securities, and will appear as sellers of the securities when the capital is needed.

The proceeds of sale of securities or other capital assets are extraneous receipts, and so much of the purchases of securities as are met from this source constitute extraneous outlay. Only the excess over these purchases counts as consumers' outlay.

The investment market has its *professional* dealers, such as the London Stock-jobber or the Wall Street trader or specialist, upon whom devolves the essential function of quoting a price. If the market is to function freely, the dealers as a body must be prepared to comply with any demands for the purchase or sale of any securities. They will rely on suitable adjustments of price to equalise the purchases and sales of each security, but they can never secure exact equality, and they must therefore hold a supply of securities of all kinds to meet any temporary excess of purchases by the public.

There will be an excess of purchases by the public of securities in general over sales, representing the sums invested out of income in securities. The dealers' holdings of securities will be at the same time replenished by new issues. Through the machinery of issuing houses and underwriters the new issues are disposed of to investors, so that the dealers are left with no more than a suitable proportion of the new issues, alongside their holdings of the old securities.

If the new issues outstrip the available inflow of investible funds, the dealers' holdings of securities will be increased ; if the new issues fall short, their holdings will be diminished. The excess of holdings over the dealers' own capital is held with borrowed money, and thus the fluctuations in the

holdings are accompanied by equal fluctuations in bank advances to the dealers.

What the consumers' outlay is directly spent on through the investment market is not goods but securities. The outlay is ultimately a demand for capital goods, because the securities represent rights to participate in capital enterprises (by share, debenture, or mortgage), but in being transmitted by the market this demand may be increased or diminished according as the market's bank advances are increased or diminished. The demand which actually confronts the producers of capital goods emanates from the promoters of capital enterprises, with whom the new capital issues originate.

But if we remember that the dealers in the investment market are *traders*, whose cash balances and bank advances are to be treated on the same footing as those of other traders, we find that this difference between the consumers' outlay and the demand for goods is merely a particular case of the principle we have already recognised, that traders can, by releasing or absorbing cash, add to or subtract from the demand for goods represented by the consumers' outlay.

We may regard the investment market as retailing capital enterprises to consumers in their capacity as investors. It divides up the capital enterprises into parcels, but instead of dividing them up physically, like goods sold in shops, it divides up the *rights of property* in them, and sells the entitling documents. It is through the sale of these parcels of rights in capital enterprises that there occurs that transfer of ownership from a trader to a consumer which is the characteristic function of the consumers' outlay.

If a bank's business were exclusively confined to clearing cheques and granting loans and overdrafts, we could treat it as no more than an instrument for regulating cash balances, positive and negative. But banks buy and sell securities. In doing so they are performing the functions of traders. When a bank buys a security we may regard it as combining the two capacities of banker and trader. The result is the same as if it had made an advance in the former capacity to enable itself in the latter capacity to release cash equal

to the purchase price of the security. Thus we must regard banks not only as enabling traders or consumers to release cash by granting them advances, but also sometimes as releasing cash on their own account by buying securities.

Up to this point we have said nothing about international trade. Among the traders will be included those concerned in the export and import trades. The export trade generates incomes in exactly the same way as any other economic activity, but the receipts of the traders are derived from consumers abroad. In general exported goods are sold to traders abroad, and it is these latter who receive the proceeds of sale of the final products directly or indirectly from the consumers. But exporters may be in direct contact with foreign consumers (for example through the parcel post), and the foreign consumers themselves may travel and buy goods and services, which are to be counted as "invisible exports."

When people in one country invest in another, they generate incomes in the latter country through the capital outlay incurred.

Incomes may be derived not only from the export of goods, etc., to other countries, but from enterprises carried on abroad. The most important cases are those of profit and interest, but cases of salaries and wages may also arise.

The upshot is that the consumers' income does not coincide exactly with the incomes generated by economic activity within the country. A part of the incomes generated is paid to people abroad, and the corresponding incomes derived from abroad will not be exactly equal to this part.

Therefore it is no longer true that a release of cash by traders takes effect in an equal increase of the consumers' income or an absorption in an equal decrease.

There may be an *international* release or absorption of cash. Every one who receives a payment from abroad is absorbing cash from abroad. Every one who makes a payment to any one abroad is releasing cash abroad. If the release of cash abroad and the absorption of cash from abroad are equal to one another, the foreign exchanges are in equilibrium. But if there is a net release or net absorp-

tion, that must be dealt with by the foreign exchange market ; it may be met by a movement of gold or corrected by an adjustment of rates of exchange. When a bank buys gold it releases cash just as if it were buying securities. The first purchase of the gold by a bank from a producer or dealer is a release of cash, but if the gold is bought from another bank, the absorption by the latter offsets the release of the former.

The possibility of an international release or absorption of cash need not modify the general principle that there can on balance be no absorption or release of cash in the community as a whole. If there is a net release of cash from the country to foreign countries, the dealers in foreign exchange will be absorbing cash, and their establishments or correspondents in the foreign countries will be releasing cash. To an absorption or release of cash by the dealers in foreign exchange in any country corresponds an equal release or absorption of cash by the rest of the community.

Private individuals in one country may, it is true, transmit currency direct to private individuals in another. Currency once outside its own country would ordinarily cease to be currency, and its sale would not be a release of cash at all. But there is still the case of currency which is either legally or customarily current in more than one country. In order to safeguard our principle, we must regard the man who transmits from one country to another currency which is equally current in both, as absorbing cash in one and releasing cash in the other. The transaction is analysed into two elements, one of which we regard as occurring in one of the two countries and the other in the other. This is convenient in that it assimilates the less important kind of foreign exchange transaction, the physical transmission of currency, to the more important kind, the purchase and sale of credit instruments and pecuniary rights.

When the banking system of a country takes steps to expand or contract credit, the essence of the measure is the consequent increase or decrease in the consumers' income and outlay. An expansion of credit encourages traders to release cash ; a contraction impels them to absorb cash.

The quantity theory of money would explain the phenomena in terms of the quantity of cash, the volume of transactions, the price level and the velocity of circulation. The quantity of cash (money and bank credit) is what I call the "unspent margin"; it is the total of consumers' balances and traders' balances. Velocity and price level have different meanings for different versions of the quantity theory. If velocity be defined as the ratio of consumers' outlay to unspent margin (Messrs. Foster and Catchings' "circuit velocity" of money), then the product of velocity and quantity is simply the consumers' outlay, and the quantity theory is reduced to the simple formula that the price level varies directly as the consumers' outlay and inversely as the "volume of transactions," which means for this purpose the goods bought out of the consumers' outlay.

That does not mean that we can eliminate velocity and unspent margin from monetary theory altogether. The unspent margin has a special importance because it is one of the factors known to those responsible for regulating credit. Even so I think it has been accorded too much prominence in credit policy. The terms inflation and deflation are frequently used to mean simply an increase or decrease in the unspent margin, and attention is concentrated on such movements to the exclusion of the far more important changes in consumers' income and outlay.

In Professor Irving Fisher's version of the quantity theory the total of transactions means *all* the transactions in which payment occurs. In a sense it may be regarded as constituting the total of demand, and the things paid for may be regarded as constituting the total of supply. But there is a qualitative difference between the purchase of a thing out of income, which forms part of the consumers' outlay, and the purchase of a thing with a view to resale. The latter is "demand" from the point of view of the seller, but is not so from the point of view of the community. The thing sold is not removed from the market. It still remains on sale. It has merely passed out of the hands of one would-be seller into those of another.

That is essentially so, even when the thing sold is an

intermediate product or material to be used in manufacture. For when the manufactured product is sold, the intermediate product is included in it, and its value is included in the price paid. The demand for the intermediate product is derived from the demand for the finished product; and the price paid for the former is based on an estimate of the price to be paid for the latter.

Thus the prices paid for intermediate products are governed by the prices paid for finished products (including finished *capital* goods). There will often be discrepancies such that an intermediate product gets either more or less than its due share of the price of the finished product. But a discrepancy only results in one trader getting more than his normal profit at the expense of another.

A stream of goods and services emanates from the producers and a stream of money from the consumers' outlay. The fundamental condition of equilibrium is that the price level must be such that the stream of money buys the stream of goods. This condition is independent of the intermediate transactions. The intermediate transactions merely conduct the two streams by more or less devious channels.

If we assume a trader's cash balance to be in proportion to his turnover, then an increase or decrease in the volume of transactions will involve an increase or decrease in traders' balances. To that extent the volume of transactions does contribute to the determination of the price level.

An increase in turnover means an absorption of cash. Unless that is counteracted, for example by a sufficient expansion of credit to cause an equal release of cash, there results a compression of the consumers' income and outlay. Similarly a decrease in turnover would mean a release of cash and would tend to enlarge the consumers' income and outlay.

In practice, however, there is not likely to be any such simple relation between turnover and balances. Any increased or decreased activity of turnover is likely to be accompanied by increased or decreased bank advances, which will provide for the necessary change in balances without any difficulty or strain. Indeed it is more likely

that the increased activity will be accompanied by a release of cash and the decreased activity by an absorption of cash.

And whichever tendency predominates, the important consequence always is the release or absorption of cash, which brings about an enlargement or compression of the consumers' income and outlay. What ultimately determines the price level is the response of productive activity to demand. The new goods coming on to the market must be balanced by the goods taken off the market by the consumers' outlay.

We cannot measure consumers' income and outlay promptly or at short intervals. But we can measure two of the factors principally determining them, the price level and productive activity.

For the price level we are practically confined to the wholesale price index, whereas what we need is an index of the prices actually paid for finished goods, by consumers for consumable goods and by traders for capital goods. But the wholesale index is closely related to the prices of finished goods, and is *more* sensitive. The guidance it supplies is therefore just what is required for practical purposes.

For productive activity the essential index is that of unemployment. Indexes of production are also useful, if due allowance be made for changing circumstances, such as improvements in productive capacity.

A release of cash requires *either* an increase of velocity, *or* a creation of credit. That is to say, traders may either make additional cash available by holding smaller balances, or keep up their balances by borrowing from the banks. But it is the borrowing from the banks that is susceptible of control, or at any rate can be stimulated or checked by suitable measures.

An expansion of credit is a device for causing a release of cash, and a contraction of credit a device for causing an absorption of cash. The creation of credit generates incomes; an acceleration of the process enlarges consumers' income; a retardation compresses it.

It has been pointed out above that the release of cash

adds to the demand for goods arising from the consumers' outlay, and the absorption of cash subtracts from it. But it would be a mistake to lay too much stress on this immediate effect on demand. The addition or subtraction of demand arises only during the transitional interval when there is a difference between consumers' income and consumers' outlay. The moment consumers' income diverges from consumers' outlay, there is a tendency for consumers' outlay to follow, and when consumers' outlay diverges from consumers' income, there is a tendency for consumers' income to follow. The response is only delayed while in the former case consumers' balances, or in the latter traders' balances, are adapting themselves to the new situation.

It matters little to what particular section of economic activity the momentary stimulus of a release of cash is given. Wherever it originates, the resulting increase in consumers' income and outlay soon spreads the stimulus over the whole economic system. Plans for directing the additional demand to any special kind of outlay with a view to correcting disparities of demand are therefore misconceived. There is no special virtue in providing credit for consumers rather than for producers. Nor is there a tendency for an expansion of credit through loans to producers to swell unduly the demand for capital goods. (An enlargement of the consumers' income may result in a more than proportional enlargement of the margin available for investment, but that is a different matter).

If traders release cash, consumers' income is enlarged, consumers' outlay then increases, and increased sales restore to the traders part of the cash released. As I have shown above, the traders and the consumers are unloading cash on each other. And in the same way when the traders absorb cash the consequent compression of the consumers' income is accompanied by a decrease in consumers' outlay and in the traders' sales. The outcome, after the adjustment of cash balances is completed, is a new equilibrium with consumers' income and outlay equal to one another, and in the one case definitely greater, in the other smaller than before. It is at that stage, when demand is again equal to consumers'

outlay, that the credit operation by which the release or absorption of cash was brought about has accomplished its object.

In the intermediate stages the changes in consumers' income and outlay will not in general be accompanied by exactly proportional changes in the price level. For one thing there will usually be a change in output. When sales increase, output is accelerated (unless industry is already employed up to capacity), and when sales fall off, output flags.

And the immediate effect of an increase or decrease in demand is an increase or decrease of sales of goods from stock at the existing prices. Only after it has become clear that the decrement or increment of stocks is not merely fortuitous, do retailers think of altering prices.

When we are considering an increase or decrease of consumers' income and outlay in a country which forms part of an international gold standard system, the prices of foreign trade products (those suitable for export or import) are determined by international markets, and do not rise or fall to any significant extent in response to an increase or decrease of consumers' outlay. The effect of an increase or decrease of consumers' outlay is felt in an increased or decreased consumption of foreign trade products, and therefore in an unfavourable or favourable balance of payments.

The first impact of any monetary movement is felt in a change in consumers' income and outlay. Changes of price level follow with a time lag, and in the interval there are changes of output, of commodity stocks and of the balance of payments. Eventually, when all transitional effects have subsided and equilibrium is re-established, output will be normal and the consumers' income and outlay will be equal to one another and proportional to the price level.

ALGEBRAICAL NOTE.

Some readers will find it useful to have an expression in algebraical form of the relations between consumers' income and outlay and the release or absorption of cash.

We may start by supposing the receipts and disbursements of every trader to be analysed in the following manner :—

Disbursements.

Purchase of goods or services from other traders	<i>e</i>
Purchase of capital items	<i>f</i>
Payments for services of labour, capital, etc. . .	<i>g</i>
Profit	<i>h</i>

Receipts.

Sales of goods or services to other traders . .	<i>e'</i>
Sale of capital items	<i>f'</i>
Sales of goods or services to consumers . .	<i>g'</i>
Profit re-invested	<i>h'</i>

$$\text{Disbursements} = e + f + g + h$$

$$\text{Receipts} = e' + f' + g' + h'$$

The release or absorption of cash is the difference between receipts and disbursements. Capital items include securities and lending operations, where the lender is not a bank, for example where credit is given by one trader to another or by a trader to a consumer. They also include goods which are already capital in the hands of the *sellers*, that is to say, those that are resold after having previously been bought for *use*. A product, even though destined for use as capital, does not count as a capital item the first time it is bought for such use. At that stage the purchase is a purchase of *goods*.

Capital items include those bought from and sold to both consumers and traders. When a builder sells a house to an intending occupier, that is a sale of goods, but, when a householder sells his house, that is a sale of a capital item. Sales by consumers are of the kind that give rise to extraneous receipts.

When a producer of industrial plant sells equipment to a manufacturing concern, that is a sale of goods. A subsequent sale either of the manufacturing concern itself, or

of shares in it, or of part of its equipment is a sale of capital items.

When a promoter buys equipment for a company and issues and sells shares in the company, his accounts will show a purchase of goods and a sale of capital items. In his hands the equipment ceases to be a mere aggregate of material products, and becomes an organic constituent of a capital enterprise.

The promoter's cash account would take the following form :—

Disbursements.

Purchase of equipment	.	.	.	.	.	<i>e</i>
Payment for services of labour, etc.	.	.	.	.	.	<i>g</i>
Profit	.	.	.	.	.	<i>h</i>

Receipts.

Sale of shares	.	.	.	.	.	<i>f'</i>
Profit reinvested	.	.	.	.	.	<i>h'</i>

If the promoter fails to find by sale of shares and by reinvestment of his own profit the sum required to pay for his capital outlay, $e + g$, he must release cash for the difference, and will probably have to procure a bank advance for the purpose.

A stock-jobber's account would be as follows :—

Disbursements.

Purchase of securities	.	.	.	.	.	<i>f</i>
Profit	.	.	.	.	.	<i>h</i>

Receipts.

Sale of securities	.	.	.	.	.	<i>f'</i>
Profit re-invested	.	.	.	.	.	<i>h'</i>

He also will absorb or release cash according as his sales exceed or fall short of his purchases, due allowance being made for the profit he draws out. We can in form apply our analysis also to those who are not traders but render services direct to consumers (for example landlords, doctors,

servants, etc.). For them all items are zero, except g and g' , which are equal to one another, and both of which represent the fees, salary, wages or rent paid for services rendered.

Now suppose each item in the analysis to be summed throughout the community. We may represent the sum under each heading by the corresponding capital letter.

Assume the community to be self-contained. Then the sum of all payments from traders to traders is equal to the sum of all receipts by traders from traders.

That is to say, $E = E'$.

Consumers' income = $G + H$

Consumers' outlay = $F' + G' + H' - F$.

The consumers' outlay on capital items is a net sum equal to the excess of sales to consumers over purchases from consumers. Since the sales to traders and the purchases from traders are equal to one another, as in the case of goods, this excess is $F' - F$. Transactions between one consumer and another (which also cancel out) do not come into our analysis at all.

The release or absorption of cash is equal to the difference between $E + F + G + H$ and $E' + F' + G' + H'$. This is equal to the difference between $G + H$ and $F' + G' + H' - F$, that is to say, between consumers' income and outlay.

$F' - F$ is the net amount placed from consumers' outlay in securities, etc. If it does not correspond exactly with new issues, the difference must be provided for by a release or absorption of cash on the part of promoters, stock-jobbers or others. It will be remembered that the *banks* release cash by buying securities in the open market, and absorb cash by selling them.

We could make an analysis of the receipts and disbursements of consumers. The receipts would be composed of the consumers' income, which totals up to $G + H$, and of sales of capital items (partly to traders and partly to consumers). The disbursements would be composed of the payments for goods and services purchased, G' , of profits reinvested, H' , and of purchases of capital items.

Let consumers' income and outlay be initially equal to one another, and denote them both by B . Then there is no release or absorption of cash.

Let traders' cash balances be C and consumers' cash balances, C' .

Let traders' indebtedness to the banks be D , and that of consumers, D' .

Next let a release of cash at the rate of b per unit of time occur in the form of increased disbursements by traders. The effect is to increase the consumers' income from B to $B + b$. After an interval of time, t , let C , C' , D and D' become $C - c$, $C' + c'$, $D + d$ and $D' - d'$.

If consumers' outlay were unaffected, there would be an absorption of cash by consumers equal to the release by traders, and we should have

$$bt = c + d = c' + d'.$$

But presumably there will be an increase, b' , in the consumers' outlay, and we shall then have

$$bt - b't = c + d = c' + d'.$$

The traders release cash to the amount of bt in the form of increased income to the consumers, but the consumers then release cash to the amount of $b't$ in the form of increased outlay to the traders. The net amount of cash released by the traders is therefore only $bt - b't$.

If b' were equal to b , there would be no net release of cash at all. But even in that case there might be an increase in the unspent margin by $c' - c$ (equal to $d - d'$).

In practice we may suppose that when the release of cash first begins, there is a very short interval when $b' = 0$. That is to say, people have spent nothing out of their increased incomes. Then there will follow a further interval in which additional outlay has begun, but b' is less than b , because people are accumulating increased balances appropriate to their increased incomes.

If we assume b to be a determinate quantity, so that the original release of cash raises the consumers' income to $B + b$ and no more, then eventually, when all concerned are satis-

fied with the relation of their balances to income or turnover, consumers' income and outlay will once again be equal to one another, and both will be equal to $B + b$.

The release of cash, however, is more likely to be progressive, the consumers' income increasing continually till something occurs to limit it. In that case the consumers' outlay will lag behind the consumers' income and consumers will be absorbing cash and strengthening their balances till equilibrium is reached. That will probably be some time after the consumers' income has reached its limit.

The net release of cash by the traders in any interval of time is equal to the net absorption of cash by the consumers. But the traders do not reduce their balances by the amount released, because they borrow from the banks. In fact when the release of cash is brought about by a relaxation of credit, the traders' balances are quite likely to *increase* rather than to decrease. Instead of becoming $C - c$ they become $C + c$, and $(b - b')t = d - c$.

If a release of cash starts from the consumers, we may suppose that at the outset $b = 0$, consumers' balances become $C' - c'$ and their indebtedness, $D' + d'$; traders' balances become $C + c$ and indebtedness, $D - d$:

$$b't = c' + d' = c + d.$$

The additional consumers' outlay, $b't$, will have been met from stocks of goods and securities, and traders will thereupon seek to replenish their stocks, and in the process will release cash to the amount of b per unit of time. We have the same formula as before, with the signs of c , d , c' and d' changed:

$$(b' - b)t = c' + d' = c + d.$$

CHAPTER IV.

THE ART OF CENTRAL BANKING.

THE LENDER OF LAST RESORT.

A CENTRAL bank is a banker's bank. It affords to the other banks of the community, the competitive banks, the same facilities as they afford to their customers. The competitive banks make payments to one another by drawing on balances at the central bank, they draw out currency against those balances or pay currency in, as their business may require, and they replenish their balances, when low, by borrowing from the central bank.

These facilities being secured to them, the competitive banks are relieved from responsibility for the provision of currency. They still have to keep their position liquid, but this they can do by maintaining sufficient assets of the kind that can be pledged or rediscounted with the central bank. The exclusive responsibility for seeing that the supply of currency in the community is adequate, and no more than adequate, devolves upon the central bank.

The real reason for that is not, as is sometimes supposed, that the central bank is usually a bank of issue, with the power of creating currency in the form of its own notes. Even if it has no such power and has to dispose of a strictly limited supply of currency, still, so long as it never refuses to lend to any borrower who complies with the customary conditions (provided the customary conditions are not unduly narrow) the competitive banks can always command access to additional supplies of currency.

The Central Bank is the *lender of last resort*. That is the true source of its responsibility for the currency. If

there were no right of issue, and the currency were based exclusively on a specie standard (the use of coin as hand to hand currency), the central bank would be absolutely dependent upon its reserves of coin to meet any increased demand for currency. This was approximately the position of the Bank of England in the nineteenth century for, though its notes were legal tender after 1833 (and were practically equivalent to legal tender before), the minimum denomination after 1829 was £5, and, for most of the purposes of hand to hand currency, notes could not fill the place of coin. The consequence was that the joint-stock banks relied on the Bank of England to supply them with gold coin, and the resulting liability was a very real one.

That was the theme of Bagehot's *Lombard Street*. In Bagehot's view, the "natural" system of banking was that of many banks each keeping its own cash reserve, but the system of a single bank keeping the whole reserve of the country had in fact grown up, and "you might as well, or better, try to alter the English monarchy and substitute a republic, as to alter the present constitution of the English Money Market, founded on the Bank of England, and substitute for it a system in which each bank shall keep its own reserve."

THE LONDON DISCOUNT MARKET.

The Bank of England was the first central bank, and its evolution was on somewhat different lines from that of later examples. Historically its rediscounting business grew up not so much with other banks as with merchants. In the eighteenth century, the London merchant would ordinarily rely on a private banker to discount his bills. If the amount of bills offered for discount became excessive, and the private bankers were unwilling to take any more, the merchants would come direct to the Bank of England.

This was not a rediscounting system, but it played essentially the same part. The Bank of England stood ready to take bills, and when it took bills it added to its

liabilities, which were actually or potentially currency. The bills became the channel through which the community was supplied with additional cash.

The system of passing on the overflow of bills to the Bank of England required for its smooth working the constitution of a *market* in bills. It would frequently happen that some banks had taken all the bills they could afford to take, while others were still short of them. The merchants refused by the former group of banks would not have to come to the Bank of England if only they were aware of the position of the latter group.

The essential function of the bill brokers who created the discount market was to enable any merchant who wanted his bills discounted to find any bank which wanted to discount bills. The result was that only a real excess of bills over what the banks could take was brought to the Bank of England.

In the latter part of the eighteenth century, there was an enormous development of the country banks in England, private note-issuing banks all over the country outside London. These banks were always discounting bills for their customers, and among them many bills on London, as the marketing centre where the merchants were gathered together. A country bank would transmit these bills on London to a London bank which acted as its correspondent, and the latter would get them accepted. The country bank would want to hold some of the bills as a London reserve (either leaving them for safe keeping with the correspondent bank or bringing them home after acceptance). The rest it would want to sell in order to meet current liabilities in London.

The sales of bills on account of country banks contributed materially to extend the operations of the discount market. In the second quarter of the nineteenth century, a further refinement of the system was realised. A bank which found its cash in London exposed to the considerable daily fluctuations incidental to the active accounts of customers engaged in commercial and financial business on a large scale, would either have to lose

interest on a relatively large idle reserve or be involved in constant purchases and sales of bills. To avoid the inconvenience of the latter alternative, the practice grew up of lending money at call or short notice to the bill-brokers. The bill-brokers, ceasing to be mere brokers, bought bills and held them on their own account, and paid the banks interest on the money lent at a rate a little below the average yield of the discount on the bills. To the banks it was convenient to call up just so much money as was needed for the day, or to lend just so much as could be spared. And the bill-brokers found that in general when one bank called up money another had more to lend, so that they were not exposed to the inconvenience of frequent purchases and sales of bills. Only when the banks as a whole were short of money did the sums received by the bill-brokers fall short of the sums called up. In that case they had recourse to the Bank of England. When Samuel Gurney gave evidence before the Parliamentary Committee of 1848 (Qn. 1344), it was still a novelty for the bill-brokers to get bills rediscounted by the Bank not as intermediaries but as principals. And, after the crisis of 1857, the Bank tried for a time to restore the earlier practice and exclude them from the rediscounting system. But experience showed that this was impracticable.¹ The organisation of the market was such that the need for rediscounts was inevitably felt primarily by the bill-brokers or "discount houses" as they are more accurately called, and to ignore them would have been merely to introduce an unnecessary complication. Thus the discount market came to be the regular agency for procuring cash for the banks through rediscounting with the Bank of England.

THE BANK OF ENGLAND BEFORE 1844.

The Bank of England did not easily or willingly assume the responsibilities of the lender of last resort. At the end of the eighteenth century we find it giving accommodation grudgingly.

¹ See Professor Gregory's Introduction to his *Select Statutes, etc.*, pp. xxxii-xxxiv.

In the crisis of 1793 the ordinary discounting facilities offered by the Bank were found inadequate. Merchants found themselves burdened with stocks of goods temporarily unsaleable. There were no purchasers on whom bills were to be drawn. The Government intervened by making advances to them, in the form of Exchequer bills, on the security of merchandise. The Bank would not make advances on merchandise, but it would on the Exchequer bills. The effect was much the same as if the Government had guaranteed the advances to the traders. The Government could itself have advanced money only by borrowing the requisite sums from the Bank. The actual procedure employed had the advantage of keeping down the cash advanced by the Bank to a minimum. The merchant who received Exchequer bills felt his position secure; he had the power of raising cash in case of need, and was content to use only so much of that power as his daily business essentially required. The same plan of making advances of Exchequer bills was resorted to again in the crisis of 1811.

The Bank was definitely confronted with the responsibilities of the lender of last resort in December, 1795. The rediscounting system had broken down in 1793 because the embarrassed merchants were not in a position to draw bills. In December, 1795, the bills were forthcoming, but the Bank was exposed to a heavy drain of gold, and feared that the continuance of the customary unrestricted facilities for discount would exhaust its reserve. The directors decided to ration discounts. That is to say, if on any day bills sent for discount exceeded an amount resolved upon, the amount taken from each applicant would be reduced in proportion and the remainder returned to him. This amounted to a partial repudiation of the position of lender of last resort.

There followed the period of the Restriction of Cash payments, 1797-1821. Under inflationary conditions the prevalent rate of commercial profit became disproportionately high. As the Bullion Committee of 1810 pointed out, the usury laws, which limited interest to 5 per cent.,

had the effect of expanding the demand for discounts under those conditions. And the Bank, being exempted from the obligation to pay specie, felt no need to ration discounts or place any other restriction upon them.

After the return of the currency to parity the inflated profits that had made a 5 per cent. Bank rate count as low passed away, and there ensued a period in which the discounting of commercial bills by the Bank became relatively exceptional, and its principal assets were Exchequer bills and other Government securities.

But at a time of pressure, whether due to exceptional activity or to a shock to credit, the demand on the Bank for discounts immediately revived. The tradition that at such times the Bank should never refuse to accommodate any eligible borrower gradually became established.

That responsibility was not assumed explicitly, or very willingly, by the Bank. The first test of the Bank's lending policy after the resumption of cash payments came in the crisis of 1825. A heavy external drain of gold had left the country short of currency. Extreme credit stringency, and a collapse of commodity prices developed into panic, accompanied by runs on banks. The Bank of England continued to discount bills of the type it was always accustomed to take. But that was not sufficient. There were banks and financial houses that had to meet such heavy withdrawals by depositors that their holdings of bills eligible for discount were quickly exhausted. If they were to be saved, they would have to be enabled to borrow on the security of other assets.

The banks were private partnerships, and their "capital," the margin of their assets over their liabilities, was composed simply of the private fortunes of the partners, and would usually include considerable blocks of Government securities. At the height of the panic, on the 14th December, 1825, the Bank of England (acting in close consultation with the Government) suddenly relaxed its usual practice, and made advances upon such securities instead of limiting itself to discounting bills. It does not sound a very tremendous concession. In giving evidence before the

Committee of 1832, a Director of the Bank, Jeremiah Harman, gave the impression that the Bank had gone to extreme lengths. It lent money, he said, "by every possible means and in modes we had never adopted before; we took in stock on security, we purchased Exchequer bills, we made advances on Exchequer bills, we not only discounted outright, but we made advances on the deposit of bills of exchange to an immense amount, in short by every possible means consistent with the safety of the Bank, and we were not on some occasions over nice."

In reality the advances he instanced were of a highly conservative character. The importance of the change of practice was that it admitted a class of borrowers on irreproachable security, who had nevertheless been barred by the previous limitations. The concession was a real one, and it stayed the panic.

Nevertheless it did not prove sufficient to restore the normal activity of business. By the end of February, 1826, the Ministers were being pressed by the City to relieve the situation by an issue of Exchequer bills, as in 1793 and 1811. But they "advised the Bank to take the whole affair into their own hands at once, to issue their notes on the security of goods, instead of issuing them on Exchequer bills, such bills being themselves issued on that security."¹

Lending on merchandise was a further departure from ordinary practice, especially at a time when panic was passing into depression, and advances were sought just because the merchandise could not be sold. The actual amount of such advances granted by the Bank was not very great, but it is significant that the concession was made at the instance of the Government.

Before the next crisis arose, a new power had been conferred upon the Bank in the exemption of discounts from the usury laws. And in 1839, for the first time, it

¹ Quoted by Bagehot from the Duke of Wellington's Despatches. The letter was written by Peel to Wellington on the 3rd March, 1826. Bagehot did not observe that it came long after the first and most important relaxation of the Bank's lending conditions.

defended itself against excessive demands for accommodation by raising Bank rate above 5 per cent. It was raised no higher than 6 per cent., but the question of how far the Bank should go in lending did not then become acute.

With the use of Bank rate as an instrument for controlling credit, and so for regulating the monetary situation and the foreign exchanges, we shall deal later on. For the present we are concerned with it only as an expedient for keeping the demands upon the Bank as the lender of last resort within bounds.

THE BANK OF ENGLAND, 1844-73.

The next phase was initiated by the Bank Charter Act of 1844, separating the Issue Department from the Banking Department and establishing the fixed fiduciary issue. The policy of the Act, as understood by the Bank and stated by the Government to the Select Committee of 1848, was that the Banking Department "is to be managed in the same way as any other private bank," except so far as the magnitude of its operations and its position as holder of the Government account placed it in a special position (Questions 2653 and 2845. See *Select Statutes, Documents and Reports relating to British Banking*, by Professor T. E. Gregory, vol. ii., pp. 19, 28).

Logically it would seem to follow that the Bank had no more obligation to lend or rediscount in times of need than "any other private bank." The supply of currency in the country was restricted to the coin in circulation together with the strictly limited note issue of the Issue Department. The Banking Department had to compete on equal terms with all other banks for its share of this supply. If there was a shortage, that affected the Banking Department in the same way as the other banks, and it would have to restore the position in the same way as the others by restricting credit, and in the last resort refusing to lend.

So far as the Statute was concerned, there was nothing to contradict this doctrine. In the period of tension that

arose in the spring of 1847 and preceded the crisis of that year, the Bank acted accordingly, and limited its discounts, as it had in 1795. When, in October, 1847, tension culminated in crisis, and crisis in panic, the Government once again intervened. In 1825 the reluctance of the Bank to lend had been due to the dwindling of its holding of bullion and specie. When it changed its policy and lent freely, it was taking the risk of the complete exhaustion of the reserve and a renewed suspension of gold payments. In 1847 the reserve in the Banking Department was similarly dwindling. But the reserve in the Banking Department was no more than a legal concept, the offspring of the Act of 1844. The Act ordained that the notes issued should be equal to the fixed fiduciary issue of £14,000,000 *plus* the metallic reserve in the Issue Department. The notes in the Banking Department which composed the reserve were the excess of the issue thus legally defined over the amount of notes actually issued, the "active circulation."

The unwillingness of the Bank to lend in 1847 was due not to any insufficiency of gold (for it held more than £8,000,000 of bullion and specie), but to the shrinkage of the legally defined margin. The risk to be run was not of a suspension of gold payments, but of a breach of the law.

Here the Government, in virtue of its constitutional position as possessing the confidence of Parliament, was able to help, for it could promise legislation indemnifying the Bank for breaking the law.

Ministers were faced with a clear issue. By promising the indemnifying legislation they could place the Bank in a position to lend freely. They decided to take this formidable responsibility, and the first example of the famous "crisis letters" was the result. The letter, signed by the Prime Minister and the Chancellor of the Exchequer, recommended the Directors of the Bank "to enlarge the amount of their discounts and advances on approved security; but that in order to retain this operation within reasonable limits, a high rate of interest should be charged,"

viz. not less than 8 per cent., and the letter promised a bill of indemnity if the law were broken.

The Bank did not ask for this letter. The initiative was taken by the Government. The object of the Government's intervention was to induce the Bank "to enlarge the amount of their discounts and advances on approved security." The rediscounting facilities were the root of the matter. The panic was attributed to the Act of 1844 because the limit placed upon the fiduciary issue was the obstacle to free lending by the Bank, and relief was given by suspending the limit. That once done, the panic subsided and it was not found necessary actually to exceed the limit.

On the occasion of the crisis of 1857 the Government again issued a crisis letter on its own initiative, but there had been no actual restriction of discounts and advances by the Bank, and the Governor confessed that he was in reality counting on the letter. The crisis of 1857 originated abroad and was particularly acute in America. It was accompanied by a heavy outflow of gold, and, the metallic reserve of the Bank being reduced substantially lower than in 1847, an actual excess on the fiduciary limit was incurred, and duly condoned by Parliament in a subsequent indemnifying Act.

A third crisis letter was evoked by the crisis of 1866. But on that occasion the Bank took the initiative in approaching the Government. And though they did not expressly ask for the authority to exceed the fiduciary limit, they frankly accepted the responsibility of unstinted lending. "We have not refused any legitimate application for assistance," they said in their letter to the Chancellor of the Exchequer.

Bagehot quotes a passage from the speech of the Governor of the Bank to the Court of Proprietors in September, 1866, "We had to act," the Governor said, "before we could receive any such power [to exceed the fiduciary issue], and, before the Chancellor of the Exchequer was perhaps out of his bed, we had advanced one-half of our reserves, which were certainly thus reduced to an amount which

we could not witness without regret. But we could not flinch from the duty which we conceived was imposed upon us of supporting the banking community, and I am not aware that any legitimate application made for assistance to this house was refused."

This statement of policy was the text from which Bagehot preached. The policy had not been undisputed in the interval between 1866 and the year, 1873, when he wrote. The old doctrine that the Banking Department ought to be conducted like any other bank still found influential advocates. But the lucid common sense of *Lombard Street* was itself decisive. Since then the responsibilities of the Banking Department as the lender of last resort have been unequivocally recognised.

ELIGIBLE BILLS AND SECURITIES.

The essential duty of the central bank as the lender of last resort is to make good a shortage of cash among the competitive banks. But that cannot mean that it should lend to *any* bank that needs cash, regardless of the borrowing bank's behaviour or circumstances. Neither a commercial concern nor a public institution could undertake to supply cash to insolvent borrowers. A commercial concern in particular cannot afford to take risks out of proportion to its own capital.

• In the evolution of the Bank of England as the lender of last resort, we have seen how at the beginning it was inclined to ration credit by refusing all applications in excess of a quota, but later on its restriction took the form of limiting the kind of security it would take. It is not ordinarily possible to examine in detail the entire assets of an applicant for a loan. Demonstration of solvency therefore cannot be made an express condition of the loan, at any rate at a time when the need for cash has become urgent. But the furnishing of security makes scrutiny of the general solvency of the borrower unnecessary. The secured debt being covered by assets more than equivalent to it, there is less need to enquire whether the remainder

of the borrower's assets will be sufficient to cover the remainder of his debts.

A bank, the ordinary deposit liabilities of which are unsecured, ought of course to be readily able to find security for such loans as may be occasionally necessary to make good a casual shortage of cash. So long as nothing more than that is required, the central bank can give adequate facilities by undertaking to rediscount bills of exchange of the most unexceptionable type.

In the eighteenth century the greater part of the lending operations of banks took the form of the discounting of their customers' bills of exchange. A bank which needed cash would raise it by selling bills, and it was to meet this need that the discount market grew up in London. In the early nineteenth century the bills dealt in in the market were predominantly those drawn to finance the internal trade of the country, though bills drawn to finance foreign trade were continually growing in importance. As the practice of financing internal trade by advances and overdrafts grew, the internal bill became a rarity, but such was the development of foreign trade and of acceptances on behalf of foreign clients as well as of the ordinary import bills, that the London discount market became bigger and more active than ever. Bills still formed a sufficient proportion of the banking assets of London to play their traditional part in the rediscounting system.

When a central bank rediscounts a bill, it relies on the credit of the names that appear on the bill. Besides the names of the drawer and the acceptor, there will appear that of the bank which was the first holder and which had sold the bill, and there may be endorsements by intermediate holders. The names will include those of traders and those of bankers. At a time of pressure, when the central bank requires a test of solvency, the endorsement of a banker, which would ordinarily be unquestioned, is no longer conclusive as to the goodness of the bill. For the danger to be guarded against is that the facilities offered by the central bank as the lender of last resort may be abused by banks whose position has become impaired.

Their embarrassment usually arises from the embarrassments of their customers. Debts due from traders have become temporarily or perhaps permanently irrecoverable. It is at a time of pressure, when there has been a general decline of commodity prices, that such embarrassments become widespread, and banks which have been prudently conducted according to accepted standards find themselves nevertheless in difficulties. Their difficulties will undoubtedly be concealed, so long as concealment is possible. At such a time the central bank, like Descartes's sceptic, must doubt everything.

The need has therefore been felt for some further criterion of the soundness of bills to supplement that of the credit of the names upon them. And a code of morality has grown up in the bill market. The virtuous bill is that which is drawn by the seller of goods despatched to a buyer who is himself in a position to sell them without delay. The bank which buys the bill is financing the seller and the buyer for the strictly limited interval required for the transport and disposal of the goods. Provided all goes according to plan, the bill is "self-liquidating." And in any case the buyer, on whom or on whose account the bill has been drawn, has in the goods an asset to hold against his liability. (The goods can actually supply a collateral security for the bill so long as bills of lading are attached to it, but the bills of lading have to be detached to permit of the goods being sold before the maturity of the bill.)

By contrast with the self-liquidating commodity bill the finance bill or accommodation bill, which is no more than a device to enable the drawer to borrow temporarily on the credit of the acceptor, is an object of suspicion and condemnation.

It has very commonly been the practice of central banks to favour commodity bills, and they have sometimes been bound by their statutes to confine their rediscounts to such bills. The discrimination is not entirely without justification. The commodity bill is a normal outcome of commercial business; the reason for its existence is the time necessarily occupied by the transportation and marketing of goods.

Any other bill *may* be a signal of distress, or the outcome of some imprudence or vagary. Like all temporary borrowing, it ought to be no more than an anticipation of forthcoming receipts. But in practice forthcoming receipts are apt to be offset by forthcoming liabilities, and it may be that the bill has to be paid at maturity by the proceeds of another temporary borrowing operation.

But if it is legitimate for any business to be financed by a bank advance, it is difficult to give any good reason why it should not as legitimately be financed by a bill. That the bill is marketable and that there are special sanctions for prompt payment at maturity, these are advantages to the lender who discounts it, in virtue of which the borrower obtains more favourable terms than for a bank advance. The special merits of the "self-liquidating" commodity bill are in reality very dubious. Any bill which is drawn to meet a genuinely temporary need for cash is self-liquidating. And the expectation that commodities can be promptly sold or can be sold without loss is liable to disappointment just as much as any other expectation of forthcoming receipts.

In giving evidence before the U.S. National Monetary Commission in 1910, the then Governor of the Bank of England instanced as legitimate finance bills those "(a) representing exchange transactions; (b) made to carry stocks of goods or securities; (c) made in anticipation of public loans." These he contrasted with "accommodation bills pure and simple."

The real point is that the accommodation bill is a sign of distress. It is not drawn to supply funds for the acquisition of an asset, but to make good a deficiency of cash due to disappointed expectations. And this is precisely the case which throws a special responsibility on the central bank as the lender of last resort.

The commodity bill is a fair-weather security. So long as the central bank only requires suitable machinery for bringing about expansions and contractions of credit for the normal purposes of monetary regulation, it serves very well.

But at moments of discredit, such as occur when a

heavy fall of commodity prices has impaired the position of many debtors, the commodity bill has two defects. In the first place, in an unfavourable market it ceases to be self-liquidating; there may be both delay and loss in selling the goods financed by the bill. And secondly, there may be applicants for loans, whose position is ultimately sound and solvent, and who ought to be assisted, but who cannot furnish commodity bills sufficient in amount to cover the loans needed.

That does not mean that finance bills then become a desirable form of security. In fact, there is an obvious danger that a finance bill may be drawn and accepted by people whose credit though reputed good has in reality been weakened. The right course is rather to accept *any* security representing a sufficient amount of wealth to cover the loan with adequate margin, without being too particular in defining the form of the security or even in insisting on its immediate marketability.

The requirements of the central bank as to security react upon the practice of the competitive banks. By limiting its rediscounts in normal times to a class of eligible bills (or promissory notes like the American "commercial paper") it gives a preferential encouragement to the use of the securities so favoured. Eligible bills will command a relatively low rate of discount. The evil reputation of finance bills has been partly due to their being created for the purpose of masquerading as commodity bills and obtaining the advantages of eligibility.

The central bank can discourage any special class of business, such, for example, as advances for speculation, by letting it be known that it will discriminate against banks undertaking such business. In an emergency, the central bank may have to pass judgment at a moment's notice on the solvency of an applicant for assistance, and the appearance among its assets of items regarded as undesirable may result in its application being barred.

Among the several classes of securities that may be acquired by central banks, Government securities are the subject of sharply conflicting views. On the one hand,

they are regarded as the safest and most readily realisable of assets. If a country has a bill market, the bills constituting the Government's floating debt will be the most marketable. And among all the long-term obligations dealt in in the investment market, the most marketable will be those of the Government.

But on the other hand, the acquisition of Government securities by the central bank is regarded as opening the door to inflation. It is usual for the power of the central bank to *lend* to the Government to be carefully circumscribed, and the dividing line between lending direct and buying Government securities in the market may be rather a fine one. The Bank of England and the American Federal Reserve Banks are quite free to buy Government securities (though till the passage of the Glass-Steagall Act in February, 1932, the latter could not use them as backing for their note issue). The Bank of France on the other hand is precluded from acquiring any (apart from its permanent holdings) except when National Defence Notes are offered to it for rediscount.

Inflationary Government finance is a subject to which we shall return at a later stage.

THE BANK OF ENGLAND AND THE NOTE ISSUE.

If the essential characteristic of a central bank is its function as the lender of last resort rather than its privilege of note issue, that does not mean that the evolution of the former function has not been intimately associated with that of the latter. It is obvious that a bank which can create currency in an emergency out of nothing has a great advantage, in facing the responsibilities of the lender of last resort, over one which runs the risk of stopping payment if a reserve of specie, which cannot be unlimited, is exhausted.

Till Bank of England notes were made legal tender in 1833, the only exclusive privilege of the Bank in regard to note issue was that, among note-issuing banks, it had a monopoly of the constitution of a joint-stock company. It

was this privilege which gave it its pre-eminence. Private banks were limited to six partners, and no six partners could possibly be found whose joint fortunes would come anywhere near rivalling the huge capital of the Bank. The capital of a bank is a guarantee fund against losses, and the magnitude of the bank's operations is limited by prudence to a due proportion of this guarantee fund.

A financial crisis arises in a banking system when the banks find themselves short of money. In general the shortage is experienced in the payments from bank to bank. A bank which lends more freely than its neighbours has to pay debit balances at the clearing house. If its cash reserves are reduced too low, it restricts its lending. If the total cash reserves of the banks are too low, all will restrict lending. Traders who cannot borrow are driven to sell, and forced sales cause a collapse of prices. The collapse of prices involves a depreciation of traders' assets and so there arise the commercial failures and, following upon them, the financial failures characteristic of a crisis.

This was true of the crises of the eighteenth century as well as later. In those days banks were banks of issue, and, side by side with the clearing of cheques,¹ there was a continuous presentation to each bank of those of its notes which the others received in the course of business. The clearing of notes like the clearing of cheques gave rise to liabilities between bank and bank, and in the English banking system of the eighteenth century, such liabilities were ordinarily settled by Bank of England notes or (in the country) by bills on London.

So long as nothing more than the mutual liabilities of banks was involved, a rediscounting system which provided credit at the Bank of England was adequate. But if the shortage of money reached such a pitch that the public had not enough for their daily needs, and the customers of the banks drew out more coin than the banks could spare, bills on London and £10 Bank of England notes would no longer meet the case.

¹ The clearing house was not established till 1773, but of course banks presented cheques and notes to one another.

This was what occurred in 1797 after a particularly heavy outflow of gold. The remedy was found in the restriction of cash payments, combined with the issue of £1 and £2 notes by the Bank of England (£5 notes had already appeared in 1795). The country banks were likewise authorised to issue small notes, but the predominance of the Bank of England was such that the Bank of England notes became the staple currency of the country. The country banks were and continued to be subsidiary to London.

It was the position of the Bank of England as the lender of last resort that led to its assuming the responsibility for the currency in 1797. The borrowers needed a medium of payment not between banks but for hand-to-hand circulation, and when the reserve of coin approached exhaustion, notes of small denomination were the only expedient available.

At the time of the crisis of 1825 the Bank of England notes below £5 had been withdrawn, but the legal power of issuing them had not been abrogated. Once again the intensity of the crisis was such that there was a shortage not merely of the means of payment between bank and bank but of the essential hand-to-hand currency. The metallic reserve of the Bank of England was reduced to £1,027,000 (24th December, 1825), and difficulty was experienced in making available so much of this as was in bullion by coining, owing to the limited capacity of the Mint. Succour was forthcoming from some chests of £1 notes, which had been set aside when the small notes had been withdrawn, and since forgotten. There was no legal obstacle to their being issued, and they were sent out to some of the hard-pressed country banks, and served the purpose of currency just as well as gold coin.

One consequence of the Act of 1844 which has hardly been sufficiently recognised is that, so long as an adequate proportion of the gold in the Issue Department was kept in the form of coin, it guarded against a shortage of hand-to-hand currency. In the crises of 1847, 1857 and 1866, the demand was for the money market medium, the means

of payment between bank and bank. The fiduciary limit once suspended, the Bank's gold might have been so depleted as to cause a shortage of coin. But this never seriously threatened. Only in 1857 was any actual use made of the authority to exceed the fiduciary issue, and even then the real excess never reached a million, nor was the metallic reserve reduced below £6,000,000.

In fact, it was not till 1914 that the experience of 1825 was repeated, and a shortage of hand-to-hand currency threatened. On that occasion the suspension of the fiduciary limit was accompanied by the issue of currency notes of £1 and 10s. The issue of the notes by the Treasury instead of by the Bank of England was a departure from precedent, and the original arrangement by which the notes were advanced by the Treasury to the banks was an encroachment on the function of the Bank of England as the lender of last resort. The acceptance crisis and the moratorium had paralysed the discount market, and the normal procedure, by which the joint-stock banks called money from the discount houses and the discount houses borrowed from the Bank of England, was interrupted. It was contrary to the practice of the joint-stock banks to borrow direct from the Bank of England, and so they were given advances of currency notes by the Treasury. But as soon as the normal rediscounting machinery began to function again, these advances were allowed to drop out, and currency notes were drawn out against deposits at the Bank of England, exactly like Bank of England notes or sovereigns. The note-issuing function reverted naturally to the rediscounting authority though the Treasury continued to be legally responsible for the notes and to be credited with the equivalent of notes issued and debited with those withdrawn.

BANK RATE AND THE FOREIGN EXCHANGES.

Because it was the lender of last resort, the Bank of England held the only reserve of bullion and specie in the country. Upon it fell the impact alike of an internal and

of an external drain of gold. An internal drain could be met by an emergency issue of small notes, but an external drain allowed no other alternative to an adequate supply of gold except a suspension of gold payments.

Whether the demand for gold were external or internal, gold could only be drawn out against the liabilities of the Bank. When the Bank discounted a bill, it created a deposit, and opened the door to a withdrawal of gold. If its function as lender of last resort compelled it to grant unlimited discounts and to create unlimited deposits, it might be threatened with unlimited withdrawals of gold. If the Bank never refused to lend to eligible borrowers, its position would be impossible, unless the demands upon it could be kept within reasonable limits by some other means than a direct refusal. The requisite instrument was ultimately found in the rate of discount or Bank rate.

The Bank of England was the guardian of the gold standard. It had repudiated that position in 1819, when the Court passed its famous resolution denying the doctrine "that the Bank had only to reduce its issues to obtain a favourable turn in the exchanges and a consequent influx of the precious metals." But in that year the currency returned to par, and a few years' experience of an effective gold standard brought the Directors round to the contrary view. In 1827 the resolution of 1819 was rescinded.

The policy of the Bank was expounded to the Parliamentary Committee of 1832 by the Governor, Horsley Palmer. The influence of Ricardo is clearly shown.

"By the term excessive issues," says Palmer (Qn. 925), "I have intended to refer to such excess as has been exhibited by a state of prices higher than those in other countries, thereby rendering the foreign exchanges unfavourable and causing a return of notes upon the Bank for bullion."

Asked "What is the process by which the Bank would calculate upon rectifying the exchange by means of a reduction of its issues" (Qn. 678), he replied: "The first operation is to increase the value of money; with the increased value of money, there is less facility obtained by the commercial public in the discount of their paper; that naturally

tends to limit transactions and to the reduction of prices ; the reduction of prices will so far alter our situation with foreign countries, that it will be no longer an object to import, but the advantage will rather be upon the export, the gold and silver will then come back into the country and rectify the contraction that previously existed."

By the "value of money" was meant, of course, the short-term rate of interest.

So clear a recognition of the use of Bank rate as an instrument for affecting the price level, formulated a hundred years ago, is remarkable. It is all the more so, considering that only very tentative steps had at that period been taken towards the practical application of the system. Bank rate only moved within a very narrow range. It was never reduced below 4 per cent., and the usury laws prevented it from rising above 5.

The Bullion Committee had already pointed out the effects of the limitation to 5 per cent., and Horsley Palmer recurred to the subject, explaining that "in the event of the foreign exchanges being adverse, the Bank might not only be under the necessity of raising the rate of interest to that maximum, but afterwards, as the only resource left, be compelled to limit the quantity or description of bills to be tendered for discount, either of which last measures would be equally detrimental to the commerce of the country" (Qn. 477). The limitation of the quantity or description of bills would be a dereliction of the Bank's function as the lender of last resort.

So long as Bank rate was confined within the limits of 4 and 5 per cent., the Bank had rather to rely on an open market policy as a method of regulating the exchanges. For long periods the market rate of discount was below 4 per cent., and the Bank's discount business dwindled to very small dimensions. At such times the Bank would buy Exchequer bills or other Government securities to make up the shortage in its earning assets.

On the other hand, if pressure in the money market raised the market rate of discount above 4 per cent., an increasing volume of bills would be brought to the Bank.

The rate could be raised to 5 per cent., and if the pressure still persisted and discounts continued to increase, and if the Bank adhered to the practice of refusing no legitimate demand, it could still prevent an expansion of the note issue so long as it could sell Exchequer bills.

At the time of the Committee of 1832 the Bank had evolved a definite policy of keeping the total of its securities approximately unchanged, so that every gain or loss of metallic reserves would mean an equal increase or decrease of its liabilities (note issue and deposits). An importation or exportation of gold would thus be immediately reflected in the Bank's note issue and deposits, whereas a demand for gold coin for internal circulation would leave the total supply of currency in the country unchanged. A favourable or unfavourable exchange would bring its own corrective in perfect accordance with the Ricardian theory. The total of the securities the Bank Directors thought should be so determined that when the currency was "full" the metallic reserve should be one-third of the Bank's liabilities.

The one-third reserve proportion corresponded to the normal or equilibrium position, and, so long as the fixed holding of securities was adhered to, every departure from it would take the form of a gain or loss of gold, which, it was presumed, could be left to work its effects automatically.

Experience between 1832 and 1840, when the next Parliamentary Committee sat, showed that this policy was not altogether practicable. Contingencies arose from time to time which gave rise to deposits of a special character. It seemed absurd to require all such deposits to be automatically covered by specie, and yet it was difficult to draw the line between those which might legitimately be covered by an addition to the normal holding of securities and those which might not.

But the real test came in 1839, when crisis conditions on the Continent and in America caused a heavy drain of gold. It was found that the policy of keeping the securities to a fixed total was impracticable. Discounts were increasing, and the sale of Exchequer bills merely

caused them to increase faster. It was in these circumstances that Bank rate was for the first time raised to 6 per cent., but that was not enough to prevent the securities increasing, and the Bank Directors thought a higher rate inadvisable. The crisis was eventually surmounted by the expedient of establishing credits in Paris and Hamburg, which served to supplement the gold reserve and save it from complete exhaustion.

BANK RATE AFTER 1844.

Lord Overstone, in giving evidence before the Parliamentary Committee of 1840, attributed the failure of the policy of 1832 to the blending of the deposit business of the Bank with the business of issue. It was mainly on his recommendation that the Act of 1844 was so framed as to require the securities held by the Bank *against notes* to be fixed in amount, not the securities held against all liabilities, notes and deposits together.

One result of the Act, or rather of the underlying assumption that the Banking Department should be managed in the same way as any other private bank, was that the old rule making 4 per cent. the minimum Bank rate, was abandoned. On the passage of the Act, the rate was reduced to $2\frac{1}{2}$ per cent., and up to January, 1847, it varied between $2\frac{1}{2}$ and $3\frac{1}{2}$. That meant that the Bank was competing for a substantial amount of discount business under conditions of cheap money, which, with its previous practice, would have allowed it practically none.

It happened that the period was a dangerous one for any such experiment. The revival of trade under the influence of cheap money coincided with a great impetus to British railway development. Investible funds were diverted to an unusual and disproportionate extent to investment at home. The consequent curtailment of external investment counteracted for the time being the unfavourable effect of credit expansion on the foreign exchange position. The moment a set-back in trade and a shrinkage of profits occurred, this exceptional volume of investment

at home would fall off, and a severe contraction of credit would become necessary to restore the exchanges. The bad harvest of 1846 was the turning-point.

When the crisis of October, 1847, broke out, the Bank was blamed for having postponed the raising of Bank rate too long. In fact the rate did not reach 5 per cent. till April, 1847, when symptoms of crisis were already apparent, and was no more than $5\frac{1}{2}$ per cent. when the storm broke in October. It was at this period that the Bank was limiting its discounts and when the rate was raised to 8 per cent. on the 25th October, that was done at the bidding of the Government (though for ten days the Bank had been charging rates much above the nominal rate of $5\frac{1}{2}$).

The high Bank rate was intended to substitute a natural deterrent for the arbitrary limitation of discounts upon which the Bank had been relying. But the *need* for such a deterrent arose ultimately from the intimate association of credit policy with the foreign exchanges. For the moment indeed the foreign exchanges had become favourable. That is the normal effect of panic, involving forced sales of commodities and securities at low prices. But too great a relaxation of credit would have stopped the forced sales without restoring underlying equilibrium.

The high Bank rate was indispensable for reconciling the function of the Bank as the lender of last resort with its responsibility for maintaining the gold standard.

The lesson of 1847 was that the Bank could not safely leave the money market to its own devices and delay action till the reserve in the Banking Department had actually become dangerously low. A certain amount of control was called for even when the reserve was adequate. In the years that intervened before the crisis of 1857, Bank rate was regularly raised to correct an outflow of gold, even when the reserve remaining was not itself low.

The crisis of 1857 did not arise from any fault in this method of control. The fault lay in the inadequacy of the standard of reserve in the Banking Department, and the same may be said of the crisis of 1866.

This, at any rate, was Bagehot's opinion. He thought

that the reserve in the Banking Department ought never to be less than £11,000,000 or £11,500,000, and that "in order not to be below £11,500,000, the Bank must begin to take precautions when the reserve is between £14,000,000 and £15,000,000" (*Lombard Street*, p. 309).

It was some years before the Bank can be said to have conformed to that standard. In the 'eighties, we find the reserve occasionally dropping below £10,000,000. Nevertheless it was kept consistently higher than before 1866. It was in fact high enough to stand the strain both of a shock to credit at home, such as the failure of the City of Glasgow Bank in 1878, or the threatened failure of Baring's in 1890, and of a severe crisis abroad, such as that in Germany in 1873, or those in the United States in 1893 and 1907.

ATTRACTING FOREIGN MONEY.

When Horsley Palmer enunciated the theory of Bank rate in 1832, he was thinking of it primarily as a means of restricting discounts without refusing them, and so of avoiding or correcting an over-issue of notes. But when Bank rate came into use as an instrument for influencing the foreign exchange position, other effects began to be recognised.

In 1840 Tooke called attention to the power of a high rate of short-term interest to attract money from foreign countries for temporary investment.¹

Asked by the Select Committee of that year (Qn. 3758), whether a moderate rise in the rate of interest, such as the Bank might possibly produce without any contraction of its circulation, could have any sufficient effect in arresting the drain of bullion, he replied :—

"I think it could, always assuming that there was a very large reserve at the outset ; for very considerable effect is constantly produced in variations within short periods of the treasure by variations in the rate of interest,

¹ Professor Clapham has pointed out that the idea is to be found in Tooke's *History of Prices* (vol. ii., p. 296) two years earlier, in a discussion of the credits granted by British houses to America. (See Mr. Keynes's *Treatise on Money*, vol. i., p. 189.)

inasmuch as those variations, although only within a moderate degree, are attended with a greater or less inducement to negotiation of foreign securities in this country or to the influx of foreign capital into this country for investment; every fluctuation in the rate of interest that can be said to have any perceptible influence at all operates in that way."

In reply to a later question (3769) he elaborated this explanation: "The effect upon the exchange of a rise in the rate of interest would be that of inducing foreign capitalists to abstain from calling for their funds from this country to the same extent as they otherwise might do, and it would operate at the same time in diminishing the inducements to capitalists in this country to invest in foreign securities or to hold foreign securities, and it might induce them to part with foreign securities in order to invest in British stocks and shares. It would likewise operate in restraining credits from the merchants in this country by advances on shipments outwards, and it would have the effect of causing a larger proportion of the importations into this country to be carried on upon foreign capital."

Probably Tooke did not regard this statement as exhausting the possibilities of influencing the migration of short-term capital even in his own day. Nowadays more stress would be laid on the effects upon acceptances on foreign account, short-term loans to a foreign Stock Exchange, and interest-bearing deposits in foreign banks. But these are differences of detail.

Tooke had in mind long-term as well as short-term capital, but he quite recognised that Bank rate must operate through the short-term market. Presumably many people had begun to take an interest in the nascent international short-term market, but the subject did not figure largely in the discussions of Bank of England policy. Gilbert in 1840 referred to the matter in connexion with the money lent from the London market to American traders in 1836.

By 1857 the idea of a high Bank rate attracting foreign money was becoming more familiar, but it was not given prominence till Goschen's *Foreign Exchanges* appeared in

1861. Goschen, while stressing its importance, insisted on its limitations.

He held that if a country is exposed to an adverse exchange by some temporary derangement, then "by offering a very high rate of interest, it will either be able to procure a prolongation of credit from its creditors . . . or it may induce third parties to make it a loan" (p. 129). He contrasted this treatment of a temporary derangement with the case "where a country is actually spending beyond its means, and where, by borrowing, it can only increase the evil." In that case a very high rate of interest is desirable for a different reason, "as, by the action of the value of money on prices generally (according to the well-known principles which determine the relation between the two) a diminution of imports, and, consequently of indebtedness, is likely to ensue."

Goschen also showed how considerable a difference in the rate of interest was required to offset the exchange risk attendant upon the transfer of money to a foreign centre for temporary investment. For example, a difference of 2 per cent. between the rates of interest in London and Paris would amount to only $\frac{1}{2}$ per cent. on a three-months bill, and would hardly induce Paris capitalists to "send their gold over to England for $\frac{1}{2}$ per cent. expense and chance their being so favoured by the exchanges as to be able to draw it back without any cost at all."

Bagehot takes account of both effects of dear money. "Loanable capital," he says, "like every other commodity, comes where there is most to be made of it. Continental bankers and others instantly send great sums here, as soon as the rate of interest shows that it can be done profitably. While English credit is good, a rise in the value of money in Lombard Street immediately by a banking operation brings money to Lombard Street. And there is also a slower mercantile operation. The rise in the rate of discount acts immediately on the trade of this country. Prices fall here; in consequence, imports are diminished, exports are increased, and, therefore, there is more likelihood of a balance in bullion coming to this country after

the rise in the rate than there was before" (*Lombard Street*, pp. 46-7).

THE CUNLIFFE COMMITTEE.

The doctrines thus enunciated by Goschen and Bagehot continued to be accepted in the City up to the time of the Cunliffe Committee. "The raising of the discount rate," the Committee said in their Report of 1918, "had the immediate effect of retaining money here which would otherwise have been remitted abroad, and of attracting remittances from abroad to take advantage of the higher rate, thus checking the outflow of gold and even reversing the stream.

"If the adverse condition of the exchanges was due not merely to seasonal fluctuations but to circumstances tending to create a permanently adverse trade balance, it is obvious that the procedure above described would not have been sufficient. It would have resulted in the creation of a volume of short-dated indebtedness to foreign countries, which would have been in the end disastrous to our credit and the position of London as the financial centre of the world. But the raising of the Bank's discount rate and the steps taken to make it effective in the market necessarily led to a general rise of interest rates and a restriction of credit. New enterprises were therefore postponed, and the demand for constructional materials and other capital goods was lessened. The consequent slackening of employment also diminished the demand for consumable goods, while holders of stocks of commodities carried largely with borrowed money, being confronted with an increase of interest charges, if not with actual difficulty in renewing loans, and with the prospect of falling prices, tended to press their goods on a weak market. The result was a decline in general prices in the home market which, by checking imports and stimulating exports, corrected the adverse trade balance which was the primary cause of the difficulty" (Interim Report of Cunliffe Committee, sections 4-5).

THE NEED FOR A REVISED THEORY OF BANK RATE.

This passage expresses very fairly the principles on which the Bank of England had been regulating credit from 1866 to 1914. They embody the art of central banking as it was understood in the half-century preceding the war. In view of the experience which has been obtained, the progress made in theory and the changes which have occurred since 1914, the principles of the art require reconsideration at the present day.

The Cunliffe Committee's version of the effect of Bank rate upon the trade balance was based on exactly the same Ricardian theory of foreign trade as Horsley Palmer's. It depended on adjustments of the *price level*. But the revolutionary changes in the means of communication during the past hundred years have unified markets to such a degree that for any of the commodities which enter regularly into international trade there is practically a single world market and a single world price. That does not mean absolutely identical prices for the same commodity at different places, but prices differing only by the cost of transport from the exporting to the importing centres. Local divergences of prices from this standard are small and casual, and are speedily eliminated so long as markets work freely.

In Ricardo's day, relatively considerable differences of price were possible between distant centres. The merchant could never have up-to-date information at one place of the price quotations at another. When he heard that the price of a commodity at a distant place had been relatively high weeks or months before, he was taking a risk in shipping a cargo thither, because the market might have changed for the worse before the cargo arrived. Under such conditions, it might well be that a *substantial* difference of price level was required to attract goods from one country to another.

Nevertheless it was fallacious to explain the adjustment wholly in terms of the price level. There was, even at that time, an approximation to a world price. When the

difference of price level attracted goods from one country to another, the effect was to diminish the difference of price level, and probably after an interval to eliminate it altogether (apart from cost of transport). When that occurred, the importing country was suffering an adverse balance, not on account of an excess price level, but on account of an excess demand at the world price level. Whether there be a difference of price level or not, it is this difference of demand that is the fundamental factor.

In Horsley Palmer's day the accepted theory was that the rate of discount affected the price level because it affected the amount of the note issue and therefore the quantity of currency. That did not mean that the whole doctrine depended on the quantity theory of money. All that had to be assumed was that an expansion or contraction of the currency so far tended to cause a rise or fall of the price level that any required rise or fall of prices could be secured by an appropriate expansion or contraction of the currency. That is a very different thing from saying that the rise or fall of the price level would be exactly proportional to the expansion or contraction of the currency.

But it is not really necessary to introduce the quantity of currency into the analysis at all. What governs demand in any community is the consumers' income (the total of all incomes expressed in terms of money) and consumers' outlay (the total of all disbursements out of income, including investment).

RELEASE AND ABSORPTION OF CASH.

The purpose of an expansion of credit is to increase the "supply" of money. But an addition to the outstanding "quantity" of money, the "unspent margin,"²⁶ in itself accomplishes nothing. The supply of money, in the only sense in which markets feel it, is the flow-of-money spent in exchange for commodities.

That means primarily money spent out of *income*. It is only money spent out of income, or consumers' outlay,

that definitely takes goods off the market. Goods bought with a view to resale remain in the market.

On the other hand, the demand for any product may be modified at an intermediate stage, if the purchases of the traders (i.e. producers or dealers) at that stage exceed or fall short of what is required to keep pace with the demand for the final product. Substantially that means that the traders' purchases are exceeding or falling short of their sales. When a trader is paying away more money than he is receiving, we say that he is "releasing cash." When he is receiving more money than he is paying away, he is "absorbing cash."

The release of cash by traders means increased purchases of products at some stage of production or dealing prior to the final sale to the consumer; it is for the moment a source of demand additional to that from the consumers' outlay. But the cash released goes to pay the incomes of those engaged in producing and handling the products; it thus supplements the consumers' income, and the additional income immediately becomes the source of additional outlay. Consumers' income and outlay always tend to be equal to one another. Any difference between them over an interval of time is reflected in an equal change in consumers' cash. If income exceeds outlay there is an absorption of cash in the consumers' balances; if outlay exceeds income there is a release of cash from the consumers' balances.

If we start with a release of cash by traders and with the consequent addition to consumers' income, there will probably be some absorption of cash by consumers, so that the addition to the consumers' outlay will be less than the addition to the consumers' income. The release of cash in itself only enlarges the consumers' income while it is actually occurring, and, were the cash released to be *completely* absorbed in consumers' balances, there would be no increase in consumers' outlay at all, and the disturbance would be entirely transitory.

But the presumption is that the absorption of cash in consumers' balances will be relatively small and that the

greater part of the additional income will be passed on in additional outlay. This additional outlay is additional demand for goods. Traders sell more goods, and their receipts then turn into increased incomes for those who produce and handle the goods required to meet the demand or to make good the reduction in stocks. Income passes into outlay, and outlay into income.

It is through this process of the release of cash by traders that credit regulation enlarges the consumers' income and outlay. If a trader starts releasing cash, that means that he is paying away more money than he is receiving. He is drawing upon his cash balance, and (unless for any reason his balance is excessive) a necessary condition of this is that he must be able to replenish the balance.

We can rule out the case where he replenishes it by selling some asset to another trader, for that would be to absorb cash, and on balance he would not be releasing cash at all. If there is to be a release of cash, *he must borrow from his banker*. The banker by lending creates cash. He creates it in the form of bank credit, which is used to pay first the additional income and then the additional outlay. It "circulates" like money, though it does not preserve its physical identity like money during the process.

The release of cash by trades is an indispensable condition of an increase in the consumers' income. The addition to the consumers' income will be just so much as money is provided to pay, and no more. Similarly, an absorption of cash is inseparable from an equivalent reduction of the consumers' income.

A trader who "absorbs cash" receives more money than he pays away, and his cash balance is swollen accordingly. If he spends the surplus money, he releases cash. A condition of his absorbing cash is therefore either that he must be willing to hold a redundant balance or that he must apply the excess to repaying bank advances and so extinguishing credit.

When the banks increase or decrease their lending,

they are really inducing traders, in the one case, to reinforce their balances by borrowing and to release cash, in the other, to absorb cash and reduce their indebtedness.

Sometimes traders are willing to hold redundant balances, and will release or absorb cash without any adjustment of bank advances. For example, there are big industrial concerns which deliberately avoid being dependent on bank advances; they rely on their own resources to provide them with working capital, and, when the working capital employed falls below the maximum, their cash balances are correspondingly swollen.

Thus while the purpose of an increase or decrease of lending by the banks is to induce a release or absorption of cash, the release or absorption of cash is not rigidly dependent upon the increase or decrease of lending. There may be other causes affecting the amount of balances that people are willing to hold, and these other causes must be taken into account by the authorities regulating credit. They must endeavour so to adjust their measures that the *resultant* enlargement or compression of the consumers' income and outlay will be just what is required.

A release or absorption of cash may start with *consumers'* balances. In that case, the consumers' outlay is first affected and then (when traders' sales have been modified) the consumers' income. This occurs chiefly when people increase or decrease the amount they borrow for the purpose of holding stocks and shares.

AN INTERNATIONAL SYSTEM.

In a country forming part of an international system, the movements of the price level in response to the regulation of credit are limited. We may divide products into those which are suitable for export or import, and have an international price, and those which are not, and the prices of which are free to vary according to conditions in the domestic market. The former may be called foreign trade products and the latter home trade products.

Home trade products are largely composed of *services*,

such as construction, cleaning, repairing, local transportation, preparation of food, personal services, education, entertainment, retailing,¹ etc., but they include some material commodities, which are too fragile or perishable, or too bulky in proportion to value to stand transportation.

The great majority of material commodities, whether raw materials, intermediate products or manufactured goods, are foreign trade products. But the distinction is one of degree rather than of kind. A foreign trade product is free to vary in price in any country between the limits set by the price at which it can be profitably exported from the country and the price at which it can be profitably imported into it. For some commodities which are regularly exported or imported these limits may nevertheless be wide, and they may be widened by the imposition of import duties. If for any reason the price of such a commodity passes within the limits, it behaves for the time being like a home trade product.

When the consumers' income and outlay expand, the first effect is to increase the sales of products of all kinds, both foreign trade products and home trade products. The producers of home trade products will meet the increased demand so far as they can by increased output, and, when the limit of output is reached, by raising prices. But the producers of foreign trade products are in a different position, in that the increased demand can be met by foreign competitors.

To some extent, no doubt, the home producer of foreign trade products will enjoy the preference due to proximity. Those exporters who are not already employed up to capacity will get the entire benefit of the increased home demand, though when capacity is reached the increased sales at home will be at the expense of decreased sales abroad. Those whose products, though not exported, are not ordinarily imported, can increase output up to a point, beyond which a rise of prices will attract imports.

¹ We have to think of the cost of retailing, including the retailer's net profit, as a separate service added to the wholesale cost of articles which may at the wholesale stage be wholly or partly foreign trade products.

In the case of products where there is already an established import trade, the main effect of increased demand will be to attract additional imports.

Thus when the consumers' income and outlay expand, there will be a general tendency towards increased productive activity and rising prices, but whereas in the case of home trade products this tendency will be free to work itself out and to establish a new equilibrium, in the case of foreign trade products it will soon exhaust itself, and the principal result will be an increase in imports.

If we call the price level of home trade products the internal price level, and that of foreign trade products the external price level, we may say that, when the consumers' income and outlay expand, the effect is to raise the internal price level to a new equilibrium, but that instead of the external price level being raised, additional imports are attracted, and there results an adverse balance of payments.

When the consumers' income and outlay contract, the demand for goods of all kinds falls off. So far as home trade products are concerned, productive activity slackens, and the internal price level drops. In the case of foreign trade products, there may be some slackening of production of exportable goods for home consumption, but the main effect will be a decrease of imports.

THE CENTRAL BANK'S POWER OVER CREDIT.

The regulation of credit depends upon the power of the central bank to influence the lending operations of the competitive banks.

The lending operations of the competitive banks are limited by their relation to their cash reserves, and the central bank has the power of increasing or decreasing those reserves by increasing or decreasing its own assets. For its liabilities are increased or decreased by the same amount as its assets, and its liabilities (whether notes or deposits) are reckoned as cash by the competitive banks.

The central bank can vary its assets directly by buying or selling securities in the open market, but, so long as it

accepts the functions of the lender of last resort, it may find that these operations are offset by equal decreases or increases of rediscounts. Provided it is given sufficient scope in regard to the classes of securities it may purchase, the central bank can rely on increasing its securities to any desired extent, for it can go on buying them after its rediscounts have been reduced to nothing. But it cannot necessarily *reduce* its securities, for it may find, as in 1839, that the demand for rediscounts more than replaces the securities sold. To effect a contraction of credit, the sales of securities must be supported by a high Bank rate as a deterrent upon rediscounting.

It is the function of the sales of securities to make Bank rate effective. This can also be accomplished by the central bank itself coming into the market as a borrower.

In the nineteenth century the Bank of England adopted a compromise between the two methods by what was called "borrowing on Consols." If it simply sold Consols it might suffer a capital loss. If it borrowed in the market like a discount house, its operations might attract attention to an inconvenient extent among those dealing in the money market. The Bank therefore adopted the plan of selling Consols for cash and at the same time buying an equal amount forward for the next account. The net result was that the Bank borrowed from the Stock Exchange for a fortnight or less at a rate of interest equal to the *contango* rate.

This practice had been recently introduced when Horsley Palmer, giving evidence before the Select Committee of 1848, explained that the Bank had been acquiring Stock instead of Exchequer Bills for the sake of "the facility afforded to borrow on Stock for limited periods, when the Bank may wish to obtain Bank notes to increase the Reserve" (Qn. 1041).

In the early part of the Great War, the assets of the Bank of England became so swollen by advances to pay off pre-moratorium bills and other transactions that Bank rate became utterly ineffective. And eventually the Bank resorted to the practice of borrowing money in the market at a fixed rate of interest. It was taking up money that

would otherwise have been lent to the discount houses and would have depressed the market rate for bills. The money so borrowed was then lent to the Government. This system continued till 1919, the sums borrowed through the Bank from the market amounting sometimes to hundreds of millions. This must, however, be regarded as an exceptional procedure. It was intimately connected with the Government's practice of keeping Treasury bills on offer in unlimited quantities at a fixed rate of discount.

The rates at which the Bank and the Treasury borrowed governed the market, and when they diverged from Bank rate (as they often did materially) completely superseded it.

In giving evidence before the Macmillan Committee, Sir Ernest Harvey described borrowing on Consols as "a relic of past history" (Qn. 402). Nowadays the Bank makes a practice of holding a considerable amount of Treasury bills not far from maturity. It can at any time reduce its holding rapidly simply by not replacing the bills as they mature. Borrowing in any form from the market has thus become unnecessary, but the possibility of doing so remains as a power in reserve.

When "liquidity" is insisted on for a central bank, what is really meant is that its assets should be of such a character that they can readily be reduced (whether through maturing of bills, or through sales in the market) whenever it is thought desirable to put pressure on the money market and make Bank rate effective.

The old-fashioned view of Bank rate as an instrument for regulating the *quantity* of money was by no means entirely mistaken. But for its function as lender of last resort, the central bank would be able to regulate the supply of currency entirely by buying and selling securities on its own initiative, and the banking system would be compelled to adjust the credit structure to the supply of currency accordingly. But through rediscounting the central bank allows the competitive banks to take the initiative in procuring additional currency, and they are thus in a position to adjust the supply of currency to the credit structure.

The central bank has to keep control of this channel for the supply of currency by modifying, as circumstances may require, the charge to be made for rediscounting.

The operations of the central bank do not determine the supply of currency directly. They determine the bank's liabilities, of which the note issue is only a part. But that does not make any difference in principle. Proposals for modifying the supply of currency directly by "burning paper money," or "setting the printing press to work" do not differ in their practical effects from the sale or purchase of securities. If additional currency is issued, the excess over the requirements of the public will be immediately deposited in the competitive banks and by them in the central bank. The result will be an increase in the deposits at the central bank against the assets by which the additional notes had been backed. Or, if currency is withdrawn from circulation, people will immediately draw out so much as they need from the competitive banks, and the latter will draw out a corresponding amount from the central bank. The result will be a decrease in the deposits at the central bank.

The competitive banks have to keep their lending in due proportion to their cash reserves. Any bank that lends more liberally than the others finds itself paying debit balances at the clearing, and in order to maintain its cash, it must borrow from the central bank. In those conditions, when it grants an additional loan, it must expect to have to borrow the whole amount or nearly the whole amount, as soon as the deposit created has been drawn upon and distributed among the customers of the other banks. It cannot afford to lend at a lower rate than that at which it will have to borrow.¹

¹ When a bank increases its lending a portion of what it lends will remain with its own depositors. It cannot ordinarily count on this portion being more than in the ratio of its deposits to the total deposits of the community. Where banking is mainly in the hands of a few big concerns, that ratio may be as high as 15 or 20 per cent. It may also happen that a great part of the deposits created remains for a time in the locality in which the lending bank is situated, and the lending bank gets a larger share than if they were forthwith diffused throughout the community. Nevertheless even in these cases the bank that outstrips its colleagues in lending will have to cover a large part of the excess loans with rediscounts, and may safely be assumed to exact a rate exceeding the rediscount rate by

When the central bank reduces the cash reserves of all the competitive banks, all must reduce their loans. The result is to force the market rate of short-term interest up to Bank rate. Not merely is the high Bank rate a direct deterrent upon rediscount, but the high market rate becomes a deterrent on short-term borrowing by the customers of the competitive banks.

A competitive bank, however, cannot afford to rely exclusively on the rate of interest charged to keep its customers' borrowings within the appropriate limits. It must also be prepared in case of need to limit its loans by refusing some altogether. When its cash reserves are low, it will take this course, nor will it necessarily prefer to replenish its reserves by borrowing from the central bank. In countries where the competitive banks borrow direct from the central banks, experience shows that the former are always somewhat unwilling to become or remain so indebted. When they are, they seek to contract credit, and they become less willing to lend to their customers.

In England the joint-stock banks do not borrow direct from the Bank of England, but, when they make good a shortage of cash, they draw on their call money and so weaken their second line reserve, and, if they make good their call money, that is at the expense of their bills. In preference to weakening their liquid assets as a whole, they will do what they can to restrict their advances to customers.

Thus, when the central bank enforces a credit contraction by raising Bank rate and selling securities, the competitive banks are led both to charge higher rates to their customers, and to put direct pressure on their customers to borrow less.

When the contrary process of credit expansion is aimed at, the central bank lowers Bank rate, and buys securities in the market. The competitive banks are enabled to lend to their customers at lower rates, and, finding their reserves increased, they encourage their customers to borrow more.

Under normal business conditions, there is always pressure upon the banks from traders desirous of borrowing. So long as that is so, credit regulation takes the form of adjusting the resistance to that pressure. Credit contraction is effected by increasing the resistance, and credit expansion by relaxing it.

The efficacy of either operation depends ultimately on the response of the borrowers, and, to understand how that response is determined, we must consider the various classes of borrowers separately.

THE RESPONSE OF THE BORROWERS.

In the first place there are traders engaged in producing and selling *commodities*. Their receipts from sales do not exactly keep pace with their outlay on production or purchase. One who increases his output or his purchases in comparison with his receipts, borrows to make up the difference, and against his additional indebtedness he holds an asset in the form of an addition to the goods in course of production or in stock.

Suppose that the banks apply measures of credit restriction. The direct effect upon *productive* operations, (agriculture, mining and manufacturing), is likely to be small. The producer's profit depends on his output, and the necessary working capital must be proportioned to output. He cannot cut down working capital below the necessary proportion without curtailing output. So far as he relies on temporary borrowing, the interest charge, even at a high rate, will be quite a minor item among his costs.

On the other hand, where the borrower is not a producer but a *dealer* in goods, his profit depends on his turnover, and his working capital consists of goods in stock ready for sale, the proportion of which to turnover can be varied without difficulty within wide limits. When he has to pay higher interest charges, or when his banker shows reluctance to lend, he can readily reduce his indebtedness by delaying purchases for the replenishment of his stock-in-trade.

He may also seek to hasten his sales. This he can in general do only by reducing the prices he asks. If he is a retail dealer, that means stimulating the consumers' demand by reductions of retail prices. Retail prices, however, are not readily altered. They are not likely to be at all extensively reduced till the pressure on the market has already become considerable.

Meanwhile the retail dealers will be all the more reluctant to buy because they cannot increase their sales. The wholesale dealers if they wish to hasten their sales to the retail dealers will encounter this reluctance and can only overcome it by adequate price concessions. So long as nothing is done to stimulate the consumers' demand, the effect of credit restriction on dealers as a body will be concentrated on an unwillingness to buy.

But the dealer who delays his purchases does not thereby reduce the total goods in stock in the community, unless his reduced purchases result in reduced output. If output continues undiminished, the goods have to be held by some one. If the dealers hold less of any commodity the producers must either cut down output or hold the excess supply in stock themselves.

The effect on the credit position depends on the action of the producers. Agricultural producers cannot reduce output quickly. When they find dealers less willing to buy their produce, they must either retain some of it unsold, or overcome the reluctance of the dealers by offering to sell at a lower price.

They are not usually in a position to retain much of the produce unsold. In so far as they do, they will probably have to borrow money to hold it. Their borrowing will be substituted for that of the dealers. But there will be a net reduction in the borrowing, because the producer only has to borrow so much as will cover his costs, while the dealer would have had to borrow enough to pay the full purchase price, including the producer's profit.

For the most part the producers are likely to prefer to get rid of their produce at reduced prices. And in that case also less money is borrowed, and the producers have less to spend.

Manufacturers usually produce in response to orders or forward contracts from wholesale dealers or merchants, or sometimes direct from the retailers. A manufacturer who receives diminished orders will reduce output. He will borrow less than before. His profit will shrink and his outlay on wages and other costs will be cut down. He may make price concessions, and induce dealers not to curtail orders so heavily; output and wages will not be so much reduced, but the manufacturer's profit will then be further encroached on.

The manufacturer who supplies retailers direct (a practice that has become common in the case of branded or proprietary goods) has some of the characteristics of a dealer. His output is governed by retail sales. He holds a stock of completed goods ready for delivery to the retailers, and this stock, like that of a wholesale dealer, is susceptible of variation. He will be less responsive to credit conditions than a wholesale dealer, in that he will be reluctant to reduce his stocks at the cost of under-employing his works. But he will be more responsive than a mere manufacturer in that he has to finance his stock of finished goods as well as the goods in course of production.

A manufacturer also plays the part of a dealer when he is a purchaser of materials or intermediate products to work upon. He will have to maintain a stock of these things and can, if need be, readily diminish or retard orders for replenishment, without seriously risking an interruption of his manufacturing operations. Those who supply these goods will regulate their output according to the orders they receive.

A very large part of the working capital of trade and industry is composed of goods which are in stock either awaiting sale, awaiting transport or awaiting a manufacturing process. Whether they are in the hands of dealers or of manufacturers, these stocks can be varied within wide limits without directly interfering with productive activity. Normally they are likely to be far above the minimum level at which some risk of slowing down

production for want of material or missing sales for want of goods in stock would appear.

Those who borrow to hold these stocks will readily be induced to delay their purchases in response to pressure from their bankers. Thereby the pressure will be transmitted to the producers, with the consequent curtailment of output and reduction of prices already described. In the same way when credit is relaxed, interest charges being reduced and bankers becoming more willing to lend, traders will be readier to add to their stocks, purchases of goods will be accelerated and production stimulated.

This acceleration or retardation of purchases of goods is nothing more or less than the phenomenon which we have already examined under the name of a release or absorption of cash, and which we have shown to lead to an increase or decrease of the consumers' income and outlay. It starts with an increase or decrease of productive activity, affecting producers' profits and work-people's earnings; then dealers' profits increase or decrease in proportion to turnover; next prices begin to be affected, first at wholesale and then at retail; and eventually rates of wages are adjusted.

It is sometimes objected that the acceleration or retardation both of dealers' purchases and of manufacturers' production is likely to be much more influenced by the prospects of rising or falling prices than by the rate of interest on bank advances or the willingness of bankers to lend. He who expects the market price of the product he deals in to rise will hasten his purchases, while he who expects the price to fall will delay them.

Undoubtedly these expectations play an important part in the borrowing operations of the traders. But it is desirable to be clear how they work. Expectations as to future price *tend* to be immediately reflected in the spot price. When the market in a commodity is very strong and active, we are told that everybody is buying. But from whom? From everybody else? If there is a general expectation that the price will rise and a general belief that the time is favourable to buy, the inevitable

result is that the buyers cannot find sellers. The price must rise until a division has been made in the camp of the buyers, and enough of them have seceded to make the sellers equal in strength to the buyers.

Does that mean that there can be no predominant expectation in the market at all, and that the expectations of a rise of price must always be just balanced by the expectations of a fall? Not quite. The behaviour of the market depends on the conditions governing production.

Suppose a section of the traders dealing in a commodity to form the expectation that the demand for it will expand. They will start buying. If the commodity is a manufactured product of which the supply can be readily increased without an increase of cost, the additional buying will be immediately reflected in additional orders to the producers. There will be no increase of price, and, if the dealers appreciate the situation, no expectation of an increase of price, though there will be a release of cash.

If on the other hand the producers are already working up to capacity or near it, so that an increased output cannot be obtained from them without offering a higher price, then the price in the market will rise accordingly. The dealers who are buying for a rise will at first be able to buy at the existing price; but those who sell to them will soon find that they cannot replenish their stocks at that price, and so they will be compelled to quote a higher price. Those who buy will be increasing their stocks and will be releasing cash, partly to pay for increased output at a higher price and partly to pay an increased profit to the dealers who sell.

In the case of natural products it often happens that supplies cannot be varied at all, except over a relatively long period. An access of buying must then take effect entirely in a rise of price, till sellers have been induced to come forward to a sufficient amount; there is still a release of cash but only to the extent necessary to pay the sellers' extra profit; none is required for increased output, though some of the sellers who get the extra profit

may be producers. If the buying is forward buying, so that the existing supplies do not change hands, the release of cash will only occur when the transactions mature and payment has to be made.

The release of cash by those who are buying for a rise may be partly offset by a retardation of purchases and therefore an absorption of cash on the part of those to whom they sell, at a stage nearer to the consumers, and possibly by diminished sales to the consumers themselves in consequence of higher prices. But the presumption is that there will on balance be a release of cash, and that buying for a rise will thus cause increased activity.

The most substantial release of cash and the most immediate stimulus to activity arise in the case where there is no rise of price, and the increased buying is satisfied by increased output.

The big speculative movements, on the other hand, occur in those markets where the supply of the product is not readily increased. They are more often brought about by fluctuations in supply than by fluctuations in demand. When such a movement occurs it takes some time for the market to settle down at a new equilibrium price, and there may be protracted intervals of rising or falling prices, during which it may reasonably be said that to any dealer who holds or contemplates holding supplies with borrowed money, the charge for interest is insignificant in comparison with the prospective rise or fall of price. But it is just in these markets that *in any case* we should not anticipate any responsiveness of productive activity to credit conditions, for it is the want of responsiveness of productive activity to *any* conditions except at a long interval that is the cause of the market's speculative character.

In the case where supply is readily increased, there is little room for speculation. There will, of course, be some variation of prices, for when producers are under-employed they will make price concessions, so that any increase in activity will be accompanied by some rise of price. But the dominant factor in the market is demand, and there

is much less tendency to speculate on fluctuations in demand than on fluctuations in supply. Occasionally a change in demand may be foreseen as a result of a change of fashion or a new invention, but in general, the orders given to the producers merely keep pace with current sales to the consumer. When current sales are normal and steady, a change in the cost of borrowing and in the willingness of bankers to lend will have a clear field in which to work its effects. Credit restriction will cause an absorption of cash, retardation of traders' purchases and reduction of output ; credit relaxation will cause a release of cash, an acceleration of traders' purchases and an increase of output.

If, however, demand is already expanding or contracting, credit regulation will not be free from interference. An increase in sales reduces stocks of the finished product, and at the same time increased sales require increased stocks. There results a twofold stimulus to output, first to replace the goods sold, and then to increase the stocks up to the due proportion of the turnover of goods. That is to say, besides the increased proceeds of sale being passed on to the producers to pay for increased output, there will also be a release of cash.

And similarly, when demand falls off, unsold stocks accumulate, and at the same time smaller stocks will suffice for the smaller turnover of goods. The reduction of output will exceed the reduction of sales, and there will be an absorption of cash.

It will be clear therefore that when measures of credit regulation are superimposed on a state of expanding or contracting demand, allowance must be made for the tendency to a release or absorption of cash already set up. Or, more generally, we may say that whenever stocks of any product are below the due proportion to output and sales, there is a tendency towards a release of cash, and if they are above the due proportion there is a tendency towards an absorption of cash. Allowance must be made for any such tendency, whether it is acting with or against the credit regulations designed.

CREDIT FOR FIXED CAPITAL AND THE STOCK EXCHANGE.

The foregoing exposition relates to the operation of credit regulation through those who borrow for the purposes of working capital and of holding stocks of commodities. We must turn next to the loans made by banks for the purposes of fixed capital. Such loans are sometimes made direct to a trader who is extending or improving plant or to a private individual who is building or buying a house, and they would ordinarily be repaid in two or three years out of income. But these are not as a rule a very extensive class of loans. Far more important are those made for the purpose of holding marketable investment securities. Such loans are made either to professional dealers on the Stock Exchange, such as the London stock-jobber or the Wall Street specialist, or to investors who wish to anticipate their future savings, or to speculators who look for a profit on resale of the securities.¹

If those who hold commodities with borrowed money are influenced by the rate of interest charged, so also must be those who hold securities. But whereas those who hold commodities are invariably traders, the investors and speculators who hold securities with borrowed money are not. Investors and speculators who borrow are not likely to make very minute calculations as to interest charges. If they borrow at all, it is in the hope of making a substantial capital gain, in the one case by acquiring a permanent investment at a favourable price and in the other by making a profit on resale. The interest charge for a short period will anyhow be negligible in comparison with the expected gain.

The stock-jobber on the other hand holds securities in order to be able to satisfy intending buyers. He may not anticipate any price movement, being content to receive the narrow margin of profit yielded by the turn of the market. Upon this narrow margin a high rate of

¹ We do not include here loans which are really for the production or purchase of commodities, but which are secured by marketable investments as collateral.

interest on bank advances may make a serious encroachment. Stock-jobbers, therefore, in so far as they are not themselves speculators, may be expected to show the same kind of sensitiveness to the rate of short-term interest as traders in commodities. Those, however, who hold securities of a speculative character, are bound to be concerned mainly with the fluctuations in capital value, and are as insensitive to the short-term rate as the pure speculators.

Traders in commodities bring about an increase or decrease of consumers' income and outlay by a release or absorption of cash. A release of cash takes effect through increased orders to producers and (unless the producers are employed up to capacity or there is a scarcity of raw materials) the goods are brought into existence as fast as the manufacturing process can be applied, additional incomes being generated equivalent to the value of the additional output.

In the investment market the process is not so direct. When people seek to add to their holdings of securities, they can only do so if a fresh supply of securities is forthcoming. There must be *new capital flotations*, or else one man can only increase his holding of securities by reducing that of another.

In the commodity markets, so long as one dealer is releasing cash only to buy goods from the existing stocks of another, and no additional goods are being produced, there is on balance no release of cash at all. The release of cash on the part of the purchasers is offset by the absorption of cash on the part of the sellers.

Likewise in the investment market, there is no release of cash unless there are additional new flotations. That is to say, the new flotations in an interval of time must exceed the net inflow of savings out of income into the market. And there can be no absorption of cash unless the new flotations fall short of the inflow of savings.

If the banks are to bring about an enlargement or compression of the consumers' income and outlay through their advances to the investment market, it can only be

through an increase or decrease in new flotations. Only so can they evoke that release or absorption of cash which is an indispensable link in the chain. The mere transference of securities in exchange for cash and cash in exchange for securities only alters the form in which people hold their capital, without creating any additional incomes.

In the long run, the investment market maintains equilibrium through the instrumentality of the long-term rate of interest. If new flotations outstrip the supply of savings, the long-term rate of interest is raised, or in other words, the prices of securities with a given annual yield are reduced. If new flotations fall short of the supply of savings, the prices of securities are raised.

But over short periods the market does not rely on changes in the rate of interest. It resorts to more summary methods. New flotations involve much organisation and preparation. Issuing houses and underwriters must give their services, and when there is an excess of new issues over the absorptive power of the market, they are in a position to discourage or prevent further projects. They will charge higher commissions, require greater concessions on the price of issue, or advise postponement or reduction in the amount asked for. Or if they think the market is likely to be seriously unfavourable to a particular issue, they will refuse to take it on any terms.

An excess of new issues makes itself felt in a difficulty in disposing of them to investors. Underwriters are compelled to take the unsold securities, and issuing houses which depend on a clientèle of underwriters as an indispensable part of the machinery of flotation, cannot afford to load them up with excessive unsold holdings.

Suppose now that there is a relaxation of credit, and bank advances for the purchase of securities are made more readily available. In so far as borrowers are found to respond to the increase in facilities, they will be felt by the market as a reinforcement of the group of buyers, an inflow of additional investible funds.

If this additional demand for securities is to be met, there must be an immediate supply of new issues. And

to some extent this may actually occur. There may be projects which have been in preparation and which, though otherwise ready, have been held up by an unfavourable state of the market. A sudden favourable turn in the market may lead to these projects being immediately launched, so that the additional investible funds will be forthwith directed towards new capital outlay (though of course there will be a further interval, while the capital equipment required is being planned and specified in detail, before the outlay is actually incurred, or incomes are generated).

But if there are no such pending new issues, or if there are not enough to employ the additional funds, the result will be that the jobbers or professional dealers will find their sales increased, and will seek to restore equilibrium by quoting higher prices. If prices of securities are raised above what is reputed to be the equilibrium level, people are deterred from buying them. A very slight rise will suffice to offset the inducement to borrow at a low short-term rate of interest for the purpose of buying.¹ The borrowers, whether they be investors or speculators, do not look forward to borrowing for more than a month or two, nor can they count on cheap money lasting very long. A rise of 1 per cent. in the prices of securities might well offset a reduction of 3 or 4 per cent. in the short-term rate of interest. For the time being the relaxation of credit will be counteracted, and the inflow of additional investible funds into the market will be checked. Nevertheless the market will probably still be regarded as favourable to new issues, and people will start planning new ventures which, after the rather protracted preparatory period required before any such venture is ripe for flotation, will eventually appear upon the market and evoke that release of cash to which the relaxation of credit was intended to lead.

If we turn now to the case of a credit restriction, we find once again that the effect on consumers' income and

¹ Provided that the rise does not provoke a speculative movement based on an irrational expectation of a further rise.

outlay depends upon the effect on new flotations. In so far as people are deterred from borrowing for the purchase of securities, jobbers find securities accumulating on their hands ; they reduce prices and at the same time new issues are discouraged.

New issues immediately pending cannot be abandoned or postponed without disproportionate trouble and loss. Those which are still in a preparatory stage may be kept back, but that will not affect the volume of capital outlay or consequently the consumers' income till the time at which these projects, if persisted in, would have begun to involve actual outlay.

Of the two principal classes of short-term borrowers, those who borrow to hold securities are very much less sensitive to credit regulation than those who borrow to hold commodities. That is partly because of the slow and indirect process by which the state of the investment market modifies the volume of new issues. But it is partly also because the prospects of appreciation or depreciation of values play a larger part in the calculations of holders of securities than in those of holders of commodities.

The holders of commodities are nearly all professional dealers. Occasionally some one from outside takes a hand at speculation in the commodity markets, but the main part of the business consists in maintaining a flow of commodities from producers through intermediate hands to consumers, and most of the speculation is incidental to the business of the professional dealers.

Among the holders of securities on the other hand the professional dealers in the investment market are a small minority. The greater part of the bank advances employed by the market are obtained by speculators and speculative investors, while among the professional dealers themselves the speculative element is usually large.

THE INHERENT INSTABILITY OF CREDIT.

After this digression regarding the behaviour of different classes of borrowers, we are now in a position to

return to the lending operations of the banks as a whole. It is, as we saw (above, p. 155), the normal function of the banking system to keep the pressure from borrowers within limits, and to reinforce or relax their resistance to that pressure, according as a contraction or an expansion of credit may be called for.

This task is complicated by certain characteristics of the credit system which we shall now proceed to examine. We have already shown that a trader's borrowing operations will be influenced not only by the terms on which his banker is willing to lend but also by the state of demand and the prospects of price movements in the markets in which he deals.

Now, if the banks increase their lending, there will ensue a release of cash and an enlargement of the consumers' income and outlay. The increase in the consumers' outlay means increased demand for goods in general, and the traders find their stocks of finished products diminishing. There result further orders to producers; a further increase in productive activity, in consumers' income and outlay, and in demand; a further depletion of stocks. Increased activity means increased demand, and increased demand means increased activity. A vicious circle is set up, a *cumulative* expansion of productive activity.

Productive activity cannot grow without limit. As the cumulative process carries one industry after another to the limit of productive capacity,¹ producers begin to quote higher and higher prices. The vicious circle is not broken, but the cumulative growth of activity makes way for a cumulative rise of prices. The vicious circle of inflation is set up.

Once an expansion of demand has been definitely *started*, it will proceed by its own momentum. No further encouragement from the banks to borrowers is required.

A similar principle applies to a contraction of demand. Suppose that the banks take steps to reduce their lending.

¹ Productive capacity does not mean exclusively capacity of plant. The supply of labour eventually imposes the limit for industry as a whole.

There will ensue an absorption of cash and a compression of the consumers' income and outlay. Demand falls off, traders' stocks of finished products accumulate, orders to producers are cut down. Decreased activity means decreased demand, and decreased demand means decreased activity.

The vicious circle of depression is the counterpart of the vicious circle of activity, except that it does not encounter any definite limit such as productive capacity interposes in the way of increasing activity. But the decline in activity is certain to be accompanied by a fall in wholesale prices, for producers will make price concessions, each of them endeavouring to get as big a share as possible of the limited amount of demand, in order to keep his plant at work. Here we see the vicious circle of deflation.

It is in virtue of the vicious circle of inflation and the vicious circle of deflation that credit is *inherently unstable*. Equilibrium having once been disturbed, the departure from equilibrium tends to grow wider and wider, till some contrary disturbance is interposed.

In the practical business of credit regulation it is vital to take due account of the inherent instability of credit. When credit is normal, and the resistance of the banking system to the pressure of borrowers is just sufficient, the banking system is in reality balancing upon a razor's edge. A casual disturbance, whether affecting the pressure of the borrowers or the resistance of the banks, may start either the vicious circle of inflation or the vicious circle of deflation. And thereafter a drastic increase or decrease of the banks' resistance to borrowers may become necessary. Yet, once the vicious circle has been broken, the measures taken must be promptly and completely reversed, for otherwise the new and contrary credit movement will in turn attain a perilous impetus.

We have to distinguish two different phases in the regulation of credit by a central bank. Sometimes it has merely to *modify* a tendency to expansion or contraction ; sometimes it has actually to *reverse* it. The ideal state of things would

be one in which a perpetual tendency to expansion was just kept in check by the central bank. But in practice the central bank is from time to time faced with the necessity of correcting an excessive expansion by enforcing an actual contraction, or correcting an excessive contraction by inducing an expansion.

At such a time the existing tendency always possesses a certain amount of momentum, so that some force is needed to reverse it. The efficacy of bank rate and of other measures within the control of the banking system is sometimes disparaged on the ground that their influence on borrowers is outweighed by that of the borrowers' expectations as to business prospects. Let there be favourable markets, rising prices and optimism, it is said, and there will be a demand for bank advances; let there be unfavourable markets, falling prices and pessimism, and borrowers will hang back.

But optimism is a *result* of an expanding consumers' income, pessimism of a contracting consumers' income. They give no help at all in the central bank's task of *starting* an expansion or contraction. They merely intensify the effect once it has been successfully initiated.

The danger always is that action will be too late. The danger is increased by the practice of basing credit policy on the *outstanding quantity* of bank credit in relation to reserves. Bankers reckon that if the volume of credit is greater than normal they ought to contract it, and if it is less they ought to expand it.

What really matters is the consumers' income and outlay, and the relation of these to the volume of bank credit may vary widely. In fact that relation is itself influenced in a marked manner by an expansion or contraction of credit. When a relaxation of credit occurs, traders become willing to hold more goods with borrowed money. In order that there may be more goods for them to hold, more goods must be produced, and, as we have seen, the first effect is felt in increased productive activity involving a release of cash. But the release of cash does not necessarily in all cases involve borrowing. If a trader

happens to have a redundant balance, he can release the surplus. We have observed above (p. 148) that the practice of relying on bank advances for any extension of working capital beyond a normal minimum is by no means universal among manufacturers. Some manufacturing concerns prefer to have sufficient capital resources to meet the maximum need of working capital without borrowing. Such a concern, when not working up to capacity, may hold a large idle cash balance. When it resumes activity it will release cash by drawing on this balance.

Thus the release of cash will in part take the form of a reduction of idle balances in the hands of producers. The underlying assumption of the bankers' regulation of lending by reference to the outstanding volume of bank credit is that people who have an increased turnover of money or increased incomes passing through their hands will for that reason tend to hold proportionately larger balances. That assumption, so far as it goes, is substantially correct. But when the tendency towards larger balances is partly or even wholly offset by the reduction of balances previously representing idle working capital, the signal which the bankers are awaiting for a restriction of credit is not given or is given too late.

There may also be a release of cash from *consumers'* balances. The consumer would not usually accumulate an idle balance by delaying to buy commodities. But he may delay buying investments. Moreover, he will sometimes *hasten* buying investments and will borrow from a bank for the purpose. This is particularly likely to occur when industry is active and prosperous. Investors who would ordinarily let their balances accumulate till they have enough surplus cash to be able to invest a convenient amount will be attracted by favourable opportunities to invest, and will anticipate their savings by obtaining bank advances or overdrafts to buy shares. They will be releasing cash both by borrowing and also by holding smaller average balances than usual.

When the reduction of some balances is set against the increase of others, it may be that an enlargement of

the consumers' income and outlay is brought about with little or no expansion of the outstanding volume of bank credit.

Similarly, when credit is restricted, people tend to hold larger idle balances in proportion to income or turnover.

If we define velocity to mean the ratio of consumers' outlay to the unspent margin, we may say that an enlargement or compression of the consumers' income and outlay takes effect in these cases through an increase or decrease of velocity instead of through an expansion or contraction of credit.

Thus there is a principle of the instability of velocity of circulation, which is quite distinct from the principle of the instability of credit, but is very apt to aggravate its effects. Bankers who make a practice of estimating the adequacy of bank credit by its outstanding amount will be misled into postponing action when they see no change, though all the time an increase in velocity may be generating a further increase, or a decrease may be generating a further decrease.

It sometimes happens that the situation gets out of hand. When the vicious circle of inflation has really taken hold, there may be a great increase of velocity and so intense a pressure to borrow that nothing less than a flat refusal to lend can counteract it. The central bank abrogates its function as the lender of last resort, the competitive banks find an absolute bar to any increase of their reserves, and their customers find an absolute bar to any further borrowing. When the pressure to borrow arises merely from the inordinate profits promised by an inflationary rise of commodity prices, the refusal to lend should not cause any embarrassment. It is in the contrary case, where commodity prices are falling and pressure to borrow arises from distress and distrust, as in 1847, that a refusal to lend causes forced sales, a collapse of prices and general bankruptcy. The refusal of the Reichsbank under Dr. Schacht to increase its advances and discounts in April, 1924, was entirely wise and proper.

On the other hand, a hitch may occur in credit regulation

through trade depression causing such a degree of pessimism among traders that they cannot be induced to borrow. Ordinarily, in order to bring about a contraction of credit, the banks must take positive steps to deter traders from borrowing. But it may happen that demand is so contracted and markets are so unfavourable that traders, seeing no prospect of profit, abstain from enterprise and do not borrow. The reluctance of borrowers may cause a contraction of credit quite as effectively as the reluctance of lenders.

When that happens, it seems to be the extreme of paradox to say that there is a shortage of money. There appears to the money market to be a plethora of money ; there is more than can be used. Any one who can offer adequate security can borrow at ridiculously low rates. In 1895 and 1896, day to day money in the London money market frequently fell to $\frac{1}{4}$ per cent.¹

But the low rates are merely the outward expression of the unprofitableness of business and the unwillingness of traders to borrow. The normal process by which they borrow to pay the incomes arising from economic activity is checked, and a shortage of incomes means a shortage of money in the essential sense of money offered from day to day in exchange for commodities and services. The decline in borrowing means a decline in incomes and in demand, and the decline in demand only makes the traders more reluctant to borrow. There is a deadlock which can best be broken by injecting money into the system.

Now the central bank has the power of creating money. If it chooses to buy assets of any kind, it assumes corresponding liabilities, and its liabilities, whether notes or deposits, are money. It can, for example, buy long-dated securities in the open market, thereby creating deposits which are credited to the banks with which the sellers of the securities have accounts. The banks find their cash reserves swollen, and become more desirous of lending.

¹ With regard to the operation of the vicious circle of deflation in the depression of 1930-31, see my *Trade Depression and the Way Out*, especially pp. 30-3 ; see also below, pp. 215, 227 and 242.

Obviously, however intense the depression, the unwillingness of borrowers can never be absolute and universal. That would only occur if all economic activity had been completely shut down. To some extent borrowers will be induced to come forward.

Banks, however, are in any case not exclusively limited to bills and short-term advances for their assets. If at any time, when they are seeking to expand credit, the bills offered and the suitable applications for advances are inadequate and do not increase fast enough, the banks have the alternative of buying long-term investments of a suitable marketable character. This may happen also not through any real difficulty in inducing traders to borrow, but merely because the traders' response is a little too slow to suit the banks.

When a bank buys long-dated securities on its own account, it creates additional deposits which are credited to the sellers. The effect is much the same as if the bank had made advances to customers to enable them to buy and hold the securities. The inflow of investible funds into the investment market is increased by the amount, and there is likely to be a corresponding addition to the amount of new issues and of capital outlay. The deposits created by the bank are applied through this capital outlay to pay the incomes of those engaged in producing the new capital goods.

Still there may be a delay in bringing out the new issues and therefore in starting the capital outlay. In that case the securities in the hands of dealers will be diminished by the amount purchased by the banks, and if, as is likely, the indebtedness of the dealers is reduced to the same extent, the banks will have failed to expand their assets at all. But if the banks persist in buying more and more securities they will pass beyond the point at which the credit created can be offset by the repayment of advances, and they can thus *ensure* an expansion taking place. When they buy, they create money, and place it in the hands of the sellers. There must ultimately be a limit to the amount of money that the sellers will hold idle, and it follows that

by this process the vicious circle of deflation can always be broken, however great the stagnation of business and the reluctance of borrowers may be.

THE GOLD STANDARD.

At the present moment the gold standard is in abeyance in a great part of the world, and we cannot be certain that it will ever be re-established as the accepted international monetary system.

But historically, the art of central banking has grown up under the régime of a metallic standard, and it will be best in the first instance to expound it from that point of view.

The central bank, having the power of modifying the value of the currency unit by means of an enlargement or a compression of the consumers' income and outlay, is enjoined by law in all gold standard countries to use that power in such a way as to maintain the unit at a fixed value in terms of gold. The bank is placed under an obligation to buy and sell gold at a fixed price (subject to the usual fractional difference between buying and selling prices), and to this paramount duty all its privileges and limitations are subordinate.

In the days when gold coin was required for active circulation, the lender of last resort became inevitably the holder of the ultimate gold reserve of the country. When gold coin made way for paper money, the right of note issue was inevitably confided to the lender of last resort. And as the sole source of money the central bank was inevitably made responsible for maintaining the monetary standard, whatever it might be.

The gold standard means the fixing of the value of the currency unit in terms of gold, or in other words, the fixing of the price of gold. And essentially fixing the price of gold means fixing the prices of other gold standard currency units. The prices of foreign currency units are quoted in the foreign exchange market, and the result is that in practice maintaining the gold standard means

maintaining the foreign exchanges within a fraction of parity.

The demand for gold as a material of industry is a relatively insignificant part of the operations of the gold market. It does not trouble a central bank in discharging the duty of maintaining the gold standard. The gold movements of which account has to be taken are movements of gold bought from one central bank to be sold to another. Such movements are the modern counterpart of the movements of specie, which used to take place before central banks existed, when coin had to be collected from circulation in order to be sent abroad to take advantage of an unfavourable exchange. As soon as gold reserves came into existence, gold coin required for export was naturally drawn from the place where it was to be found already accumulated in bulk, and the central bank which held the reserves found in them an indicator for its guidance in maintaining the gold standard.

We have already seen how in the earliest formulation of Bank rate policy, the regulation of the foreign exchanges and the correction of gold movements were the objects aimed at. And we are now in a position to understand more exactly the process by which these objects are attained.

When the foreign exchanges are unfavourable and an outflow of gold occurs or threatens, the central bank proceeds to raise Bank rate and sell securities. The restriction of credit is transmitted to the competitive banks, and they discourage their customers from borrowing. The result is to compress the consumers' income and outlay.

The demand for goods and services of all kinds falls off, and, as explained above (pp. 148-50), imports decrease. The unfavourable balance of payments is redressed.

This happens before there is any fall in the price level, even in the internal price level. The first effect of contraction is reduced activity, that is to say, under-employment of both capital and labour. This is a departure from equilibrium, and further adjustments are required. The fall in the internal price level is one of these. If the prices of home trade products are reduced in the same

proportion as the consumers' income and outlay, the same output as before can be disposed of. But if profits are to be normal, costs must be reduced in the same proportion as prices. That is to say, wages must be reduced.

Wages will then be out of relation to the external price level. Low costs will give a stimulus to the production of foreign trade products, whether for export or in competition with imports. A part of the productive power of the community will be transferred from the production of home trade products to the production of foreign trade products. There will be an increase of exports and a reduction of imports, which will make the balance of payments more favourable, and when the transfer is completed, ultimate equilibrium will be attained with a somewhat larger consumers' income and outlay and a somewhat higher internal price level than in the earliest stages. That does not necessarily mean that there is an actual or measurable recovery in the internal price level when the transference of productive power occurs, for equilibrium may not have been attained. The shrinkage of demand for home trade products and the consequent under-employment of the capital and labour engaged in supplying those products may well start the process contemporaneously with the fall in the internal price level. The fall in prices cannot progress very much faster than the fall in wages, and the fall in wages will stimulate the transference.

Mr. Keynes has, quite rightly, emphasised the difficulty of adjusting wages to a credit contraction. When wages resist reduction, the compression of the consumers' income and outlay is effected partly by a reduction of profits, and partly by throwing labour and plant out of employment.

When an inflow of gold occurs, the central bank relaxes credit and enlarges the consumers' income and outlay. If at the time producers are under-employed, the enlargement will take the form in the first instance mainly of increased employment and output. When production of home trade products approaches capacity, the internal price level will rise, and profits will be swollen. Wages will then increase, and productive power will be diverted from foreign trade products to home trade products.

Thus it will be seen that, while the central bank possesses the power to correct an inflow or outflow of gold, the process by which it does so involves important reactions upon the state of business, and particularly upon employment and productive activity. The variations in consumers' income and outlay take the form, in the first instance at any rate, of variations in the volume of output and of employment. The variations in prices and wages required to restore equilibrium follow only after an interval, which may be long and fraught with tribulation.

In the Ricardian theory of foreign trade, a disturbance of equilibrium in the balance of payments was assumed to cause an actual loss or gain of gold, and the loss or gain of gold then caused the fall or rise of the price level which restored equilibrium. The decrease or increase of the supply of currency was an indispensable link in the chain.

If we imagine a primitive community, in which bank credit and fiduciary currency are both non-existent, the restoration of equilibrium would depend exclusively on movements of specie. If this primitive community be modified by the addition of a banking system on a modest scale, confined to economising the use of specie in payments between trader and trader, we find that every loss or gain of specie requires an adjustment of the bank credit structure. The people handling this specie will be traders with banking accounts, who will draw what they send away from the banks and will pay what they receive into the banks. But when the banking organisation is in an elementary stage, and the superstructure of credit not large in proportion to the foundation of specie, the requisite contraction or expansion of credit will not involve a very serious or protracted disturbance of business. The Ricardian theory is still a close approximation to the facts.

When, however, there is a fully developed banking system, and paper money supplies the hand-to-hand currency, a change in the stock of gold only brings about a fraction of the change in the supply of the means of payment that is required. The main part of the adjustment has to be carried out through the regulation of credit, and

for that the movement of gold is to be regarded primarily as a signal.

Nevertheless, it would be a mistake to think that the direct effects of gold movements have been eliminated altogether. A loss of gold takes effect in the first instance in a decrease of the assets of the central bank, and therefore in an equal decrease in its liabilities. Its liabilities are composed of notes and deposits which to the rest of the community are "money." A gold movement originating in the balance of payments may be assumed not to alter the requirements of the public for hand-to-hand currency, and the decrease will therefore appear not in that part of the central bank's liabilities which comprises the active note circulation, but in that part which consists of notes in the hands of the competitive banks and deposits to their credit. The competitive banks will therefore find themselves short of cash (unless their reserves were previously redundant) and will proceed to make good the deficiency by rediscounting.

Rediscounting will restore the banks' cash position, but it will not leave the state of the money market quite unchanged. If we look more closely at the sequence of events, we shall find at the beginning that the unfavourable foreign exchanges to which the loss of gold is due are first felt in payments made by traders and others *to the dealers in the foreign exchange market*. These dealers find their balances increasing, and at the same time their holdings of foreign currencies being drawn upon to an equal extent. They raise the prices of foreign currencies, or in other words quote unfavourable rates of exchange, and, when this fails to check the accumulation of their balances, they draw on these balances to acquire gold from the central bank.

The payments to the dealers in foreign exchange are debited at the clearing against the banks at which those who make them have accounts. It is thus at the earliest stage that these banks suffer a loss of cash equal to that gained by the dealers in foreign exchange. When the latter draw out gold for export the cash is annihilated, and so the banks do not get it back.

When they replace the lost cash by rediscounting, the effect is to reduce their liquid assets (eligible bills, etc.). It would not be safe to assume that they will thereupon endeavour to contract their less liquid assets (advances to industry, etc.) in proportion. This may occur, but alternatively there might be some conversion of non-liquid into liquid assets (e.g. transactions previously financed by advances may be financed by bills). Or, again, the banks may simply acquiesce in the change of proportion.

Thus the effect of a loss of gold (and equally of a gain) is somewhat doubtful *unless* the central bank takes positive action to regulate credit.

EXTERNAL INVESTMENT.

The foundation of credit regulation under a gold standard is the response of the balance of payments to the modifications of the consumers' income and outlay. An enlargement of the consumers' income and outlay attracts additional imports, because increased demand for goods in general will include increased demand for foreign trade products. But the increased demand will not be distributed among all classes of goods in the same proportion. The effect of increased demand at the same price level resembles the effect of a fall of prices with the same demand. There will be some goods for which the demand is "elastic," in the sense that sales will increase more than in proportion to the increase in total demand. There will be others for which the demand is "inelastic," sales of which will increase less than in proportion.

On the whole, it is probably the case that the demand for foreign trade products usually tends to be less elastic than that for home trade products. In any country where the means of communication and marketing are adequately developed the principal staple foods and raw materials, for which the demand is predominantly inelastic, are included in foreign trade products. But on the other hand there are, of course, innumerable kinds of luxury goods for which demand is elastic among foreign trade products, and

among home trade products there are many necessary services which are not very readily extended or contracted. It seems likely therefore that such difference of elasticity as there is between the two groups is not very pronounced.

But there is one item of outlay which requires separate mention. That is investment in new capital. When new fixed capital is produced in a country, the cost of construction or installation is a home trade product. Materials, machinery and other forms of equipment may be foreign trade products, but usually the greater part of the cost of providing new fixed capital will be the outlay on local labour and productive resources, the expense of which is not governed by an international price level.

The fixed capital, when completed, cannot itself be exported, but the *right of ownership* can be acquired by foreign capitalists or investors. The stocks, shares, bonds and debentures dealt in in the investment market represent rights of ownership in capital enterprises or pecuniary rights charged upon them. The investment market is international, and maintains competition among the buyers and sellers of these rights. Every security which is important enough to be dealt in internationally has an international price, like a foreign trade product. And all the international securities are in competition with one another; the prices at which they are quoted are subject to the equalising effect of the market. But that which is equalised is not the price of a commodity but the number of years' purchase at which an annual sum of money (fixed or variable) is bought and sold.

Investment is one of the objects on which income is spent. Savings out of income are applied to the purchase of securities. In some countries the volume of savings exceeds the volume of capital outlay at home, and the surplus of savings is applied through the investment market to acquire investments elsewhere. In others the volume of savings falls short of capital outlay, and the balance is made good by foreign investors. To countries of the former class, the purchase of external investments affects the balance of payments like the purchase of foreign trade

products; it is an "invisible import." To countries of the latter class the sale of securities abroad is an "invisible export." Thus the so-called export of capital is an invisible import, and the import of capital is an invisible export.

When there is a restriction of credit, and the consumers' income and outlay are compressed, the compression is likely to be particularly severe in profits, at any rate in the first instance before wages have fallen. Profits are the principal source of savings. A trader whose income is derived from profits and is therefore in times of prosperity both precarious and large in proportion to his capital, will save a very considerable part of it. In times of adversity, when his income is reduced perhaps by a third or a half or even more, he will not make anything like a proportional reduction in his personal expenses. The result is that savings out of profits fluctuate even more than the profits themselves.

We may regard investment securities as foreign trade products, and one effect of a credit restriction in any country is likely to be a big reduction in its purchases of this class of invisible imports. The big fluctuations in savings make the purchases of securities behave as if they were subject to a highly elastic demand, and the result is to give elasticity to the balance of payments as a whole.¹

INTERNATIONAL SHORT-TERM INVESTMENT.

The foregoing relates to purchases of capital assets *out of income*. But the capital market is concerned also with purchases and sales of securities and other pecuniary rights where the purchase money is found not from income but from balances. Cash balances (money or bank credit) are themselves capital assets. And banks seeking short-term investments to hold against their deposit liabilities may be regarded as the agents of their depositors, in that

¹ This is a particular case where a change in demand at the same price level has a very different effect from a change in price level with the same demand.

it is the depositors' decision to hold balances that imposes the need upon the banks.

A mere exchange of investments has no effect on the foreign exchange position. If a man sells a security on a foreign Stock Exchange and buys another with the proceeds, no cash need be transmitted. What we have to examine is the case where cash held in one country is applied to some sort of investment in another. For the most part permanent investments are bought out of income. Sometimes the purchase of a permanent investment is delayed, and money that would otherwise have been applied to it is held in the interval in balances or temporarily invested. But in general a cash *balance*, as distinguished from accruing savings, moving from one country to another, is destined for temporary not permanent investment.

Three classes of temporary investments have to be distinguished. In the first place, there is the ordinary case of the bank which holds short-term investments, in the form of bills or advances, as assets against its deposits. Secondly, a trader whose business for the time being does not require the whole of his working capital, and who finds the surplus on his hands as cash, will want to earn interest on this surplus. Thirdly, any individual who for any reason delays investment of his savings or of the proceeds of sale of any capital asset will be in the same position. Other things being equal, it will be convenient for any of these to keep his money in his own country. If money is placed abroad, there is risk of a loss on exchange when the time comes to bring it back. Bankers in particular usually wish to hold their assets in the same currency and in the same country as the corresponding liabilities.

Goschen pointed out (see p. 142 above) how slight was the gain of interest in comparison with a possible loss on exchange. Mr. Keynes has elaborated the point further, and shown how the charge for forward exchange (by which a lender in a foreign country seeks to guard himself against an exchange loss) tends to be just so high as to offset the gain in interest.¹ But this is not invariably so. The ex-

¹ *A Tract on Monetary Reform*, pp. 115-39.

change may be already at the import gold point, so that the foreign currency cannot depreciate further (unless the gold standard is suspended), or there may be other reasons why dealers in the foreign exchange market narrow their charge for forward exchange. The difference in short-term interest rates may from time to time so far prevail as to bring about a migration of balances from one country to another.

If this occurred at a time when the foreign exchanges were otherwise in equilibrium, the migration of balances would be effected by the movement of the equivalent in gold. But in that case counteracting forces would be at work, which would probably check the process before it had gone far. The banks which were placing money abroad would find themselves losing cash resources to the whole amount; the adverse exchange rates would involve them in an exchange risk; and the central bank, losing gold, would be likely to raise Bank rate, and so the prospect of profit would come to an end.

The important case is that in which the difference in short-term rates of interest is due to an existing disturbance of equilibrium, which the central banks are seeking to correct through the regulation of credit. A country with favourable exchanges and a surplus gold reserve resorts to low rates of interest, and suffers an outflow of money, or one with unfavourable exchanges and a shortage of gold resorts to high rates of interest and attracts foreign money. In such conditions the movement of money, instead of causing a movement of gold, diminishes or counteracts an existing tendency towards a contrary movement of gold.

These movements of money from country to country are best understood as a particular application of the process we have termed the release or absorption of cash.

It is through the release or absorption of cash that the regulation of credit takes effect. In the first instance the release or absorption of cash is a *capital* transaction. The cash released comes from balances, reinforced, if need be, by bank advances; the cash absorbed is merged in

balances, reduced, when circumstances permit, by the repayment of bank advances. When cash released is spent on the production or handling of goods, it is transformed into the incomes of those engaged in these processes, but the *goods* take the place of the cash as a capital asset, they become part of the working capital of the producer or of the trader who holds them for the time being.

The cash released may be applied to a variety of purposes. It may be used to buy home trade products, or foreign trade products, or securities. It may be used to buy things from foreign sellers, or it may be lent to foreign borrowers and used by them.

So much of it as passes to foreign sellers or foreign borrowers fails to reach the stage at which it generates incomes. Or rather it generates them in the foreign countries in which the sellers and borrowers carry on business, instead of at home.

The cash which goes to foreign sellers and foreign borrowers has to be settled through the foreign exchange market. If, as we are assuming, the relaxation of credit is intended to counteract an inflow of gold, the release of cash to foreign recipients, instead of causing an outflow of gold, counteracts the inflow *prematurely*, that is to say, at a time when the enlargement of the consumers' income requisite to restore a more permanent equilibrium has not taken place.

Similarly, when a credit restriction causes an absorption of cash, less money goes to foreign sellers and foreign borrowers. Money comes from foreign lenders. Goods are sold to foreign buyers. The foreign exchanges are made favourable prematurely by what are really movements on capital account.

The unfavourable effect on the foreign exchanges in the former case and the favourable effect in the latter are transitory; they only last so long as money is being actually transferred abroad or attracted from abroad.

To take for example the case where credit is restricted, and money is absorbed from abroad, it is clear that as soon as the short-term lending from abroad has reached

its limit and the transfer of stocks of foreign trade products or of securities to foreign purchasers has gone as far as the judgment of the traders concerned requires, the favourable effect on the exchanges ceases, and the situation is once again governed by the relation between consumers' outlays in the different countries.

There follows an interval in which credit restriction continues, but the favourable effect on the foreign exchanges is confined to that of the gradual compression of consumers' income and outlay. When the restriction of credit comes to an end, there occurs a release of cash corresponding to the original absorption of cash. This is accompanied by an outflow of balances and a replenishment of stocks of foreign trade products, and there results an unfavourable effect on the exchanges as great as the previous favourable effect.

It is on account of this reaction that Goschen regarded the attraction of foreign money as no more than a stop-gap remedy for an unfavourable exchange, and that the Cunliffe Committee reiterated the same view.

THE FINANCING OF INTERNATIONAL TRADE.

It has been mentioned above that the release of cash to be lent or spent abroad generates incomes in the countries where it is spent. It enlarges the consumers' income and outlay in these countries; and, similarly, the absorption of cash from abroad compresses the consumers' income and outlay in the countries from which it comes.

There is thus a certain tendency for the contagion of a credit restriction or a credit relaxation to spread to foreign countries in those cases where the migration of balances is not interfered with by exchange risks or other obstacles.

This applies not only to money released to foreign borrowers, but to money released to foreign sellers. The position in regard to these latter is very much affected by the extent to which the banking system of the country is normally used to finance international trade. The

natural way of financing international trade is through bills drawn by exporters on the importing countries in which the goods are to be sold. The bills are discounted and held in the same country in which the goods await sale, and are expressed in the same currency as the proceeds of sale. A rise in the rate of discount adds to the cost of holding goods, and so checks imports without affecting exports. This is a stop-gap advantage similar to the attraction of foreign money. As soon as the credit restriction is withdrawn, importers make up their stocks of goods to normal again.

So far as producers are concerned, the effect is felt by those foreign producers from whom imports are received. Consumers' income and outlay are reduced in the countries where these producers carry on business, though of course this effect is likely to be spread thin.

In practice, however, the financing of international trade is not carried on in this simple manner. It is very common for importers in any country which does not possess a first-class credit system to arrange acceptance credits with financial houses in some great international banking centre. The exporters from whom they buy, instead of drawing bills on the importers' country, draw on these financial houses, and the bills are accepted by these latter and are usually discounted and held in the international centre. London used to possess an unrivalled pre-eminence in this accepting business, but it is now emulated by New York. A great accepting centre finances imports into many countries, not only those exported by its own producers, but goods exported from one foreign country to another. When it contracts credit, the effect is to damp down the demand for the goods of all these exporting producers. The immediate effect on the foreign exchanges is proportionately magnified, and so also is the effect on consumers' income and outlay in foreign countries.

In fact, foreign trade products form a substantial part of the output of all countries, and the world market in these products is in the hands of a body of merchants and

dealers (sometimes themselves also producers) who make themselves responsible at any given moment for a vast mass of goods in transit or awaiting sale. These goods are held to a great extent with borrowed money, and much of the money is borrowed through the medium of bills drawn on the great accepting centres, particularly London and New York. The cost of borrowing depends on the rate of discount prevailing in the markets at those centres. When credit is restricted in London or New York, the international merchants become less willing to hold goods, they retard their purchases and reduce their indebtedness. Or, when credit is relaxed, they become more willing to hold goods, they accelerate their purchases and increase their indebtedness.

Thus if Bank rate is raised at one of these centres, there will be almost at once a favourable effect on the exchanges, which will continue just so long as the merchants are reducing their indebtedness (i.e. new bills drawn on the centre fall short of maturities). When the merchants have reduced their stocks as far as the circumstances require, the favourable effect on the exchanges ceases.

But meanwhile the banking systems of other countries will have responded in two ways. Producers in these countries, finding their sales diminished, will have been compelled to reduce output or to accept lower prices. And the banks, faced with an unfavourable foreign exchange position, will have started an independent credit restriction. In both ways, consumers' income and outlay will be reduced.

And likewise in the case of a credit relaxation at one of the great centres, the exchanges will be temporarily unfavourable while bills in increasing volume are being drawn to finance international trade, and in other countries producers will enjoy increased sales, output and prices, the banks will relax credit, and consumers' income and outlay will expand.

In short, a credit restriction or relaxation at one of the great centres tends to spread all over the world. In the period from 1819 to 1914, the pre-eminence of London

as a financial centre simplified the task of credit regulation. The Bank of England took the lead, and credit conditions in all other centres quickly adjusted themselves to the position in London. Very occasionally the predominance of London would be found to be impaired. The only conspicuous example of this occurred after the Overend and Gurney crisis in 1866, when Bank rate was maintained at 10 per cent. for three months before the power of attracting gold from abroad was felt.

Since 1918 the growth of New York as a financial centre has introduced a new complication into the problem.

THE VALUE OF GOLD.

The foregoing analysis of the process of the regulation of credit differs in many respects from that which the Directors of the Bank of England had accepted from Ricardo a hundred years ago. But in its practical application it diverges very little from the courses prescribed by Horsley Palmer and followed by the Bank.

A central bank working the gold standard must rectify an outflow of gold by a restriction of credit, and an inflow of gold by a relaxation of credit. Its instruments for the restriction of credit are a rise of Bank rate and sales of securities, and for the relaxation a reduction of Bank rate and purchases of securities. By applying a closer scrutiny, we find that, instead of a direct transition from the restriction or relaxation of credit to a fall or rise of the price level, there are intermediate processes, an absorption or release of cash, a compression or enlargement of consumers' income and outlay.

Formerly, the function of the market rate of short-term interest, as recorded in the discount market, in restricting or encouraging borrowing and lending was taken for granted. A Bank rate below the market rate would stimulate borrowing and provide additional currency; a Bank rate above the market rate would check borrowing and curtail the supply of currency.

But, in reality, the ways in which borrowers respond

to measures of credit regulation are extremely various and complex, so much so that the very possibility of credit regulation is sometimes questioned by people whose attention is directed only to the less sensitive classes of borrowers.

Nevertheless after all this elaboration of the subject, the instruments of credit regulation remain just what they were a hundred years ago.

The really important change in our outlook has occurred in another direction. The ostensible duty of a central bank is to maintain the monetary standard of the country. That is what limits its powers as lender of last resort. And nineteenth century doctrine accepted the maintenance of a prescribed metallic standard as affording the central bank complete guidance. The art of central banking comprised simply the technical apparatus by which this end was to be secured.

Nowadays, however, there is increasing recognition of the fact that a metallic standard is not self-sufficient. The classical economists were always aware that the value of gold or silver in terms of other commodities might vary. They showed that the opening up of new mines in America had led to a big rise in the price level in Europe from the sixteenth century onwards. So far as fluctuations in new output were concerned, they argued that any consequent change in the value of either of the precious metals would always be so gradual as to cause no serious monetary disturbance.

But they took insufficient account of the *fluctuations in the monetary demand itself* as affecting the value of gold or silver. The economists and pamphleteers of the early nineteenth century were familiar enough with the evils of an appreciating currency. They were ready to show that it would extinguish profits and cause depression, unemployment and bankruptcy. But this demonstration was applied only to the case of a paper currency, particularly when a depreciated unit was being restored to gold parity.

When theories of the trade cycle came to be evolved, and the phase of depression and unemployment was

definitely associated with falling prices, these phenomena still were not thought of in terms of an appreciating and depreciating monetary unit.

And it was hardly recognised that if a country of considerable economic importance resorted to paper money and drove most of its metallic money abroad, the result might be a perceptible fall in the value of the metal in the rest of the world, or that if the paper money was withdrawn or hopelessly discredited and the country had to be restocked with specie, there would be a corresponding rise in the value of the metal.

Ricardo indeed had got on the track of this principle at the end of his life. Mr. A. W. Acworth has shown how the Bank of England, in the period following the resumption of cash payments in 1819, pursued a deflationary policy which had the effect of raising the value of gold (*Financial Reconstruction in England, 1815-22*, pp. 101-14). He quotes Ricardo as writing to Malthus in July, 1821: "I much regret that in the great change we have made from an unregulated currency to one regulated by a fixed standard, we had not more able men to manage it than the present Bank Directors. If their object had been to make the revulsion as oppressive as possible, they could not have pursued measures more calculated to make it so than those which they have actually pursued. Almost the whole of the pressure has arisen from the increased value which their operations have given to the standard itself. They are indeed a very ignorant set."

Ricardo recurred to the accusation in a published pamphlet in 1822: "Their issues were so regulated that the exchange became extremely favourable to this country; gold flowed into it in a continuous stream, and all that came the Bank eagerly purchased at £3 17s. 10½d. per ounce. Such a demand for gold could not fail to elevate its value compared with the value of all commodities. Not only, then, had we to elevate the value of our currency 5 per cent., the amount of the difference between the value of paper and of gold before these operations commenced, but we had still farther to elevate it to the new value to

which gold itself was raised by the injudicious purchases which the Bank made of that metal" (*On Protection to Agriculture*, § 10).

It is possible that Ricardo, had he lived, would have pursued the question further. As it was, the circumstances which led to his outburst passed, and the question of the effect of changes in monetary policy and practice upon the value of the precious metals dropped out of economic thought again till the breakdown of bimetallism in 1873. The principle of bimetallism is founded on the possibility of regulating the value of either of the two metals *in terms of the other* by adjustments of the monetary demand. Nevertheless the bimetallic controversy did not of itself bring any general recognition of the responsibility of those who impose or administer monetary institutions for determining the value of the precious metals in terms of wealth in world markets.

Perhaps the first economist to deal with the question from this point of view was Walras. The "tabular standard" was already familiar as an ideal method of regulating an inconvertible paper currency by an index number of prices, when Walras, in 1886, put forward a proposal for adapting the "limping standard" then prevailing in the countries which had abandoned silver or bimetallism, to a policy of stabilisation of the purchasing power of gold.¹ In France, Germany, the United States and a number of other countries, the gold coin circulation was supplemented by a limited amount of silver coins which were unlimited legal tender but had become tokens owing to the fall in the gold value of silver. Walras proposed that the amount of these silver token coins should be varied from time to time in such a manner that the total quantity of currency would be that appropriate to a stable price level. If a rise of prices was threatened by an excess of gold currency, or a fall by a deficiency, the tendency would be corrected

¹ *Théorie de la Monnaie*, by Léon Walras, Lausanne, 1886. This proposal deserves more recognition than it has received. It was C. P. Sanger who called my attention to it. Professor A. W. Marget has called attention to the neglect of Walras's contributions to monetary theory in some other directions. (See *Journal of Political Economy*, October, 1931, p. 567.)

in the one case by a withdrawal of a suitable quantity of silver tokens and in the other by an additional issue.

The plan required international agreement, including the issue of silver token coins of unlimited legal tender in Great Britain. Walras pointed out that his plan did not involve the inconvenience of using bulky silver coin as hand-to-hand currency, because in practice notes or "silver certificates" could be issued against the coin. But he did not place upon the note-issuing institutions the responsibility for administering the plan. He relied on the regulation of the metallic circulation, and assumed that the credit system would adjust itself.

Professor Irving Fisher's well-known proposal for a compensated dollar¹ likewise attacked the problem from the standpoint of the currency. Changes in the purchasing power of gold were to be counteracted by changes at periodical intervals in the gold value of the monetary unit. This amounted to an abandonment of the gold standard. It also implied a paper circulation to the entire exclusion of gold coin or gold certificates.

If adopted by one country in isolation, Professor Fisher's plan might be, as it was intended to be, a currency plan, throwing no new responsibility on the banking system. If the purchasing power of gold in other countries rose, there would be a fall in the prices of commodities in terms of gold currencies. The gold equivalent of the compensated currency would then have to be reduced, that is to say, the price of gold and the par value of foreign gold currencies would be raised. The currency would adjust itself to the new parities, and the credit superstructure would be adjusted to the currency. (Or rather the need for adjusting both currency and credit to the *change* in the gold standard countries would be avoided.)

The gold standard countries would thus supply an independent determination of the value of gold, to which the compensated currency unit could be adapted. But the plan, as originally formulated, was to be applied to

¹ *The Purchasing Power of Money.*

an *international* system. If the system included all gold-using countries, there would remain no independent determination of the value of gold. The value of gold, at any rate over short periods, would be in effect determined by the system itself. If the price level in the system started rising, then, according to the plan, the price of gold would be reduced. The cheapening of gold for the purposes of industry could have only a negligible effect on the industrial demand for gold. Nor could the output of the mines be appreciably affected. The only substantial result of reducing the price of gold would be to reduce the currency value of all the gold reserves. *In itself* that would have no effect at all on the price level. It would merely give a signal to the banks of issue to contract credit.

And, it may very pertinently be asked, why is it necessary to interpolate this signal? Why cannot the banks of issue base their action *directly* on the fall in the price level without going through the formality of revising the value of the gold in their balance-sheets? What calls for the credit contraction is the rise in the price level, of which the banks are just as well aware if the price of gold remains unchanged, and which they are just as competent to correct.

The obvious next step is to a plan in which the variations in the price of gold are eliminated, and the central banks are required to aim directly at stabilising the price level. In such a plan, the gold standard survives as a contrivance for maintaining fixed parities between the currency units of different currencies, and for settling casual balances of international indebtedness. But the central banks of the world, acting in concert, aim at stabilising the wealth value of their currency units and therefore of gold. If they act in concert, they must be guided by some international measure of the price level, an index number based on international markets.

They would be doing the very same things that Professor Fisher would have them do. They would be regulating the purchasing power of their respective currency units, restricting credit when the price level tended to rise,

relaxing credit when the price level tended to fall. The difference would be that the gold value of each currency unit would remain unchanged. The gold standard would be maintained, but gold would be tied to the currency units, instead of the currency units to gold.

That is substantially the plan embodied in the currency resolutions adopted at the Genoa Conference in 1922, according to which the central banks of the world were to regulate credit with a view to preventing undue fluctuations in the purchasing power of gold.

Now currency units are tied to gold by gold reserve laws, and if the central banks are to be free to regulate their purchasing power independently of the supply of gold, these gold reserve laws must somehow be made sufficiently elastic. The Genoa Resolutions sought elasticity by way of the "gold exchange standard," the practice of supplementing reserves of gold with reserves of foreign exchange, such as balances at foreign centres or bills drawn upon them, and of maintaining gold parity by making the currency convertible into foreign gold standard currencies instead of directly into gold. The gold exchange standard had long been well known, and had been practised before the war by Russia, Austria-Hungary, India and many other countries. Professor Fisher had embodied it in his plan in its international form. If the price of gold were variable, gold would not be a convenient reserve material, and Professor Fisher suggested that all the countries adhering to his compensated currency plan should maintain reserves in the form of credit balances at a single suitably selected international centre.

A similar device (not however limited to a single centre) was embodied in the Genoa plan for the purpose of economising gold, in case the world's stock of gold should at any time be found insufficient to support the quantity of currency appropriate to the price level.

Unfortunately the Genoa Resolutions were not carried into practical effect. But the experience of the ten years which have since elapsed has thrown into relief the urgency of the problems that the resolutions were framed to solve.

GOLD RESERVES.

Up to this point we have had very little to say as to gold reserve laws, or, more broadly, as to the practices which determine, in any country or in all countries, the relation between the quantity of currency and the quantity of gold.

In the Ricardian theory of foreign trade, an inflow or outflow of gold was assumed to mean an equal increase or decrease in the stock of currency. The practice of the Bank of England, as explained to the Parliamentary Committee of 1832, was intended to make the currency system behave as if that were so. If the Bank's securities were kept at a fixed amount, any increase or decrease in its gold would involve an equal increase or decrease in its liabilities and therefore (if fluctuations in its deposits were neglected) in its note issue. The Bank Charter Act of 1844 was designed to give statutory confirmation to this principle. And in fact the currency did behave substantially as a purely metallic currency would have behaved. The currency in active circulation of course could not rise and fall *exactly* by the amount of any gain or loss of gold, but any divergence between the two was immediately apparent in a change in the reserve in the Banking Department, for that reserve was composed simply of so much of the currency as was not in circulation. And the reserve in the Banking Department was the governing consideration in credit policy.

If the system diverged more and more from the Ricardian theory, that was because the superstructure of credit grew to such proportions that it could no longer be treated as a mere excrescence upon the currency, for it furnished the principal medium of payment of the community. Instead of a gain or loss of gold automatically modifying the value of the currency unit, it became no more than a signal which prompted the Bank of England to relax or restrict credit.

A gain or loss of gold was not to be identified with an import or export of gold, for the reserve of the Banking

Department was equally affected by any change in the amount of currency in active circulation. The reserve had to bear both the external and the internal drain of gold.

The amount of the reserve of the Banking Department was left by the Act of 1844 wholly to the discretion of the Bank. A standard for the exercise of this discretion was evolved empirically. As we have seen, the standard adopted in the period up to 1866 proved to be too low, and the reserve was three times in danger of being exhausted. Between 1866 and 1893 the Bank usually aimed at keeping the reserve up to about 40 per cent. of its deposits (except at the half-yearly periods of seasonal strain), though this was not consistently attained. The big influx of gold in the years 1894-96 led to a higher standard becoming customary, and after the crisis of 1907 it was approaching 50 per cent. That is to say, whenever the reserve fell appreciably below 50 per cent., the Bank would take measures to restrict credit.

When we say that the standard was evolved empirically, we mean that the Bank learned by experience what strain the reserves might have to bear and what margin must be left, *after* the maximum strain had been sustained, in order that there might be no danger of panic. Implicitly the criterion was the loss of gold that might occur in the interval between the initiation of measures of credit restriction and the accomplishment of their purpose, the stoppage of the drain. During that interval the reserve would, of course, be below the standard proportion, and, at the end of it, might be at or near the panic-free minimum.

In so determining its reserve proportion the Bank of England was behaving like any other bank, in the spirit of the Act of 1844. An adequate reserve was a condition of its maintaining the payment of its obligations in currency. Failure to do so would be an act of bankruptcy. No doubt the consequence would be, as in 1797, the issue of an emergency currency and not the winding up of the Bank, but that would require a change in the law, upon which the Bank had no right to count.

The bearing of the law and practice governing the

Bank's gold holding upon the purchasing power of gold itself was left out of account. And this is equally true of all the other countries that were developing credit systems and monetary systems in the nineteenth century. Some adopted the English system of a fixed fiduciary issue ; others required the metallic reserves to be not less than a prescribed proportion of the note issue ; others adopted more complicated formulas. Some, with a high minimum denomination for their notes, relied on metallic currency for the principal part of hand-to-hand payments ; others relied almost exclusively on paper money. Up to 1872 silver or bimetallic standards prevailed ; thereafter these made way for gold.

France was peculiar in imposing no conditions as to metallic reserve on the Bank of France. The legislature imposed a maximum limit on the note issue (raising the maximum from time to time as the growth of business required), but the amount of the metallic reserve was left to the unfettered discretion of the Bank. On the other hand, the Bank was narrowly circumscribed in regard to its investments. Apart from certain statutory reserves which were required to be invested in Rentes, it had no power to buy Government securities. It could discount bills which fulfilled the prescribed conditions (two French signatures, and either a third signature or in certain cases suitable collateral), and it could make advances on gilt-edged securities with a margin. But it could not *take the initiative* in these operations. It could not buy bills in the open market.

It has been shown above that a central bank must rely on a high Bank rate to check an excessive expansion of credit, but that to cope with an excessive contraction it may have to resort to open market purchases of securities. From this course the Bank of France was precluded. The result was that at times of trade depression, its discounts shrank and its metallic reserves expanded. Trade revival would lead to an increased supply of bills, in the hands of the commercial banks, and then to an increased volume of rediscounts. But the supply of bills was always limited.

France has in modern times always needed a very large stock of currency. A larger proportion of people's cash resources has been held in the form of currency and a smaller proportion in the form of bank credit than in other wealthy countries. In the course of the nineteenth century, a considerable part of the metallic currency came to be replaced by paper money.¹ But in consequence of the narrow limitations of the powers of investment of the Bank of France, a relatively restricted part of the circulation could be covered by securities, and the metallic reserve was very large. Of the available supply of bills a large part formed the indispensable liquid reserve of the commercial banks, which carried on business on a narrow margin of cash, and relied on the rediscounting facilities of the Bank of France to meet any further needs.

It was, no doubt, partly in consequence of the insistent demand for bills (which manifested itself in low discount rates) that the bill of exchange survived in French internal trade at a time when in England it was being replaced in internal trade by bank advances and overdrafts, and the use of bills was being restricted almost exclusively to international business. But even so credit in France remained an excrescence on the currency, and there was a comparatively close approximation to the automatic behaviour assumed in the Ricardian doctrine.

In fact if the *character* of the assets held by the central bank is sufficiently restricted, the effect is much the same as if their *volume* were limited. Had the French system been applied to a self-contained community with an inconvertible paper currency, it would have offered no safeguard against inflation, because a rise of prices, once begun, would itself have increased the money value of the eligible bills, even if the volume of transactions financed by them did not increase. That was illustrated by the experience of the Bank of England at the time of the Bank Restriction. The Bank held that "there need be no other limit

¹ Specie payments were suspended twice, in 1848 and 1870, and advances to the Government were then extended. These suspensions helped to accustom the public to an increased use of paper money afterwards.

to the issue of their paper " than their rule of discounting only " bills growing out of real commercial transactions and falling due in a fixed and short period." The Bullion Committee described this doctrine as " wholly erroneous in principle, and pregnant with dangerous consequences in practice," and the depreciation of the pound had resulted.

But France was linked to an international metallic standard, and therefore to an international price level. Active trade would increase the volume of transactions financed by bills, but only to a limited extent so long as there was no great rise in the world price level. The result was that France was confined to a passive part in the regulation of credit. Changes of Bank rate by the Bank of France had some effect upon the discount market, but only within narrow limits, because they could not be reinforced by an open market policy.

In the greater part of Continental Europe credit was regulated very much on the French model. But nowhere was there such an accumulation of metallic currency as in France, because nowhere was there such a combination of financial strength with a restricted use of credit.

In the period from the breakdown of bimetallism in 1873 to the outbreak of war in 1914, the monetary systems of the world were in a state of transition. They were functioning according to no fixed plan. In 1873 much the greater part of the metallic money of the world was still silver, and as a result of a series of wars, France, Russia, Austria-Hungary, Italy and the United States were using inconvertible paper money.

The adoption of the gold standard by Germany in 1871, led immediately to a general suspension of the free coinage of silver in Europe, and those countries in Europe and America which were using inconvertible paper resumed specie payments, when the time came, on a gold basis. This latter process was spread over a period of thirty years, towards the end of which Japan, India and a number of other oriental countries established the gold standard, so that eventually China was the only important country retaining the silver standard.

During that period there was a persistent demand for gold, partly to provide coin for the countries which had abandoned silver or bimetallism in favour of gold, partly to provide metallic reserves for those which were escaping from inconvertible paper. Up to 1890 the gold supply failed to keep pace with this abnormal demand. There was a big decline in the price level and a protracted depression, broken by cyclical revivals and price recoveries in 1880-82 and in 1889-90. The scarcity of gold to some extent brought its own remedy, in that the consequent appreciation of gold made the transition to a gold standard more difficult. Various devices were employed to eke out the supply of gold. The United States continued the coinage of standard silver dollars (though only up to a prescribed annual limit) till 1893. In Europe, those countries which adopted gold for the most part retained their silver currency as token coins, of unlimited legal tender. Russia, Austria-Hungary and India were compelled by unfavourable exchange movements to defer their definitive entry into the gold standard.

In the course of the 'nineties, however, a big increase in gold output (mainly but not exclusively due to the exploitation of the South African Rand) eased the situation, and after 1896, a marked rise in the price level began. The rise in the price level facilitated the maintenance of the gold standard, and by 1900 the transition to gold had been completed in the principal countries. The absorption of gold proceeded on a greater scale than ever, but the supply was so enormous that no scarcity of gold was felt. On the contrary there was a superfluity, as the rise in the price level showed.

LONDON AND THE TRADE CYCLE.

The fluctuations in the price level between 1873 and 1914 had on the whole been less than the general abandonment of silver and paper money in favour of gold threatened. That was because for twenty years the scarcity of gold itself delayed the transition, and thereafter abundance

of gold facilitated it. One country after another was setting up new monetary institutions. But it would hardly be true to say that the character of these new institutions was the determining factor in the monetary demand for gold and therefore in its value. For the character of the monetary institutions and still more the moment of their practical operation were determined by the capacity of the several countries to obtain adequate supplies of gold. When they could only do so at the cost of an effort that seemed prohibitive, they either postponed their monetary reforms or else resorted to methods of economising gold, such as the "limping standard" or the gold exchange standard.

These correctives mitigated the long-period fluctuations of the value of gold. But they did not affect the "cyclical" fluctuations.

It is not necessary here to enter into the controversies as to the causes of the trade cycle.¹ It is enough for our purpose to say that, whatever causes may be at work, one invariable characteristic of the cycle is a fluctuation of the price level. The active phase is accompanied by rising prices, and depression by falling prices.

Activity and rising prices are the results to be expected from a release of cash, and depression and falling prices are the results to be expected from an absorption of cash. And it is a fact that the active phase of the cycle is brought to an end by measures of credit contraction calculated to cause an absorption of cash, and that revival is brought about by measures of credit relaxation calculated to induce a release of cash.

The occasion for the measures of credit contraction is a deficiency of gold reserves, and the occasion for a credit expansion is a surplusage of gold reserves.

There is indubitably a close and intimate relation of the trade cycle, through gold reserve laws and practice, to the credit policy of the central banks. And in the period 1873-1914, credit policy was almost completely

¹ See my *Trade and Credit*, particularly chapters v. and viii.

centralised in London. The vital indicator was the reserve of the Banking Department of the Bank of England.

London alone possessed a free discount market. As we have seen, the English rediscounting system acts through the discount market. The English joint-stock banks, instead of taking bills to the Bank of England for rediscount, call money from the discount houses. And any foreign bank which holds bills on London has access to the discount market and therefore to the English rediscounting system.

Banks all over the world are constantly receiving bills on London from their customers. Everywhere are to be found exporters of goods to England. In the course of the nineteenth century British imports attained colossal proportions, those for consumption being reinforced by those which came for re-export, as an incident of the primacy of London in the commodity markets. To the bills which financed these imports were added London acceptances drawn to finance goods sold to foreign countries.

There was therefore a continuous stream of bills flowing to London. They came partly from the British-owned exchange banks with business either in the British Empire, or in foreign countries, especially in South America and the East, partly from big foreign banks with branches in London. Every country in the world had access to the London discount market. The result was to duplicate rediscounting facilities. The banking system of any country could replenish its cash either by taking bills in its own currency to its own central bank or by selling sterling bills in the London market; it could dispose of surplus cash either by reducing the amount of bills rediscounted with the central bank or by buying sterling bills or lending money to London discount houses.

The use of London as a reservoir of cash depended on the convertibility of sterling into gold and the freedom of the London gold market. Whenever a foreign banking system placed money in London or drew money from it, a transaction in the foreign exchange market was involved and gold might have to pass. Indeed the movement of

gold was the essence of the operation, unless the purpose was merely to counteract a threatened movement of gold in the contrary direction.

Every foreign banking system was enabled, in virtue of its holding of sterling bills, to help itself to gold from the London market. Foreign countries had no similar facilities for obtaining gold from one another. They received bills on one another, it is true, though in general in far less volume than on London. A bank receiving bills on a foreign centre other than London would pass them on to its correspondent bank at the foreign centre, and the correspondent bank would probably be willing to discount them and to remit the proceeds. But these transactions would nowhere have the same closely competitive character as in London. The discount rate would probably be a non-competitive rate, calculated to allow a margin in the event of the bills having to be rediscounted with the central bank.

And the remittance had to be effected through the foreign exchange market, which was dominated by London. It would often be arranged through London, and, even if it were not, any gold movement which eventuated would probably take the form of movements to and from London, and not directly between the other two centres concerned. For London was the dominant bullion market and the great bullion dealers were London firms.

The same conditions which made foreign countries rely on getting gold at need from London, made them send any surplus gold to London. And London could always defend itself against demands for gold, just because those demands were felt through the free discount market. In virtue of their sterling bill holdings and deposits with the London discount houses and banks, the foreign banks were short-term creditors of London. But in virtue of their acceptance business the London financial houses were short-term creditors of their foreign clients. London's international debtor and creditor position was always sensitive to the rate of discount. Dear money would at once deter foreign holders of sterling bills from selling them, and would also discourage fresh accepting business, so that

some of the outstanding acceptances would be liquidated without being replaced by new ones. Cheap money would have the contrary effects. In other words, London was in a position at any time to effect an international release or absorption of cash.

Thereby an immediate corrective was applied to the situation. But that meant that the position of foreign banking systems would be affected, and they in turn would tend to apply correctives. It might happen that London was losing gold when there was no real shortage and some countries had gold to spare. In that case, credit contraction would attract the available surplus of gold to London, and credit would soon be relaxed again. That would be no more than the usual operation (with a little friction) of the concentration of gold and credit movements in London. But if there were a world shortage of gold, the contraction of credit in London would encounter resistance in the form of credit contractions abroad. In fact, the credit contraction would become world-wide. And similarly if there were a world-wide superfluity of gold a credit expansion initiated in London would become world-wide.

To contemporary observers of the successive trade cycles these phases were familiar and obvious. The financial crisis which was closely associated with the cycle came at the culminating point of a period of speculation or "over-trading," which was essentially an abuse of credit. Credit, having been over-expanded, had to contract, and traders who had been depending on credit were driven to liquidate. Forced sales caused a collapse of prices, and there ensued bankruptcies, general distrust and stagnation.

The cycle was explained in terms not of money but of credit. The individual borrower was imprudent. He borrowed more than was in due proportion to his own capital; he bought at prices higher than he had any certain prospect of selling at; when his expectations were disappointed, he went bankrupt, and brought embarrassment to his creditors. If many people committed these imprudences at the same time, that was attributed to crowd psychology or herd instinct.

The responsibility of the central bank was seen in the shape of the encouragement it gave to imprudent borrowers by its willingness to lend. The crisis was precipitated when a shortage of reserves compelled it to reverse this policy and to give a still more cogent example of unwillingness to lend.

This version of the trade cycle underestimates the responsibility of the central bank, because it disregards the monetary side of the proceedings. The encouragement of borrowing takes effect in a release of cash which *enlarges the consumers' income and outlay*. It is this increase in effective demand that causes productive activity. The release of cash is in itself no more than a momentary addition to demand. But the new purchasing power released then circulates, and to the demand of the borrowers is added a new demand from consumers.

The active phase of the trade cycle is therefore the result of the banking system (under the guidance of the central bank) increasing the supply of money. It is this increase in the supply of money that accounts both for increased productive activity in response to the swollen demand and for the rise in the price level. As production approaches capacity, the rise of prices is accentuated, and it is at that stage that speculation sets in. But speculation is only a symptom. To make it the primary characteristic of the active phase is a misconception. The governing condition, on which everything else depends, is the enlargement of the consumers' income and outlay. What stops that enlargement is the shortage of gold reserves. That is the only obstacle in the way of indefinite expansion. As consumers' income and outlay expand, bigger consumers' balances are required. Consumers' balances are composed partly of bank credit and partly of currency. The bank credit requires appropriate reserves of currency. In the period before 1914 currency meant to a great extent metallic currency and latterly gold coin. In England it was almost exclusively gold coin. It became predominantly so in Germany after 1872, and in France after 1878. In America the elastic constituent of the

currency was the gold certificates, which played the same part as gold coin. In countries where paper money prevailed, it was not ordinarily possible (or at any rate usual), once the gold standard was established, to increase the circulation without some increase in the gold backing.

Eventually the central banks were bound to put on the brake. They would start contracting credit, and there would follow a compression of the consumers' income and outlay, a slackening of production and a fall of prices. These tendencies approximately synchronised in all the countries which employed the gold standard. It was, in fact, the consumers' income and outlay of the entire gold using group that were compressed. No one country could dissociate itself from the general movement, for if its consumers' income and outlay were excessive in relation to those of its neighbours, it would at once lose gold.

Contraction had to proceed till the deficiency of gold had been corrected. In virtue of the inherent instability of credit, that did not mean the continuance of active measures of credit restriction. Contraction once started, the vicious circle of deflation set in, and it was found that an interval of persistent depression and falling prices might ensue in spite of extremely low discount rates.

That phase might last several years, but at last revival would start. The vicious circle of deflation would be broken, stagnant balances would begin to circulate, the bankers would once again find willing borrowers.

The cyclical fluctuation in the value of gold in terms of other goods was thus a symptom of a fluctuation in the consumers' income and outlay of the gold-using world. All gold standard countries had to keep pace with one another in the enlargement or compression of the consumers' income. Any that failed to do so would gain or lose gold.

Each country was adjusting its own consumers' income to the world value of gold, and the world value of gold was the resultant of the action of all of them. That action was in the hands of the banking system and ultimately of the central banks.

Measures for avoiding such fluctuations and maintaining a stable price level are often recommended on the ground of justice between debtor and creditor. But injustice between debtor and creditor is only a small part of the harm done. The unemployment problem, as it presented itself to industry throughout the world in the century preceding 1914, was a product of the trade cycle. Compression of the consumers' income and outlay meant a shrinkage of demand and therefore of industrial activity. The result was unemployment. Unemployment might be avoided by a drastic reduction of wages, but that too often meant friction and labour disputes. At the same time shrinkage of demand meant a decline in profits, or the conversion of profit into loss, and a writing down of assets which often threatened insolvency.

Nor was any adequate compensation for these evils to be found in the active phase of the cycle. Enlargement of the consumers' income and outlay brought full employment. But it was accompanied by disparities in the development of different industries, and by unrestrained speculation on the swollen and precarious profits derived from some of them. Over-trading and over-extended industries prepared the way for disastrous financial crises.

STABILISATION IN THE UNITED STATES, 1922-28.

Till recent years the responsibility of the central banks for fluctuations in the value of gold was hardly recognised. The regulation of the value of gold in terms of other forms of wealth was not included in the art of central banking, because gold was believed to supply an independent standard of value. The Genoa Resolutions of 1922 mark an epoch in the evolution of the art, in that for the first time they establish the responsibility of the central banks for the value of gold.

That year also saw the beginning of a highly significant practical experiment in the same direction. Under the normal operation of the gold standard the value of gold is an international affair. It is the resultant of the

action of all the central banks and currency authorities of the gold-using countries. But in 1922 the gold standard had been suspended in practically every country except the United States. It was therefore possible for the United States to regulate the value of the dollar and so of gold without regard to the action of other countries.

The possibility of variations in the wealth value of gold and the disastrous consequences of such variations had been brought home to the Americans by the tremendous inflation and deflation of the years 1919-22. The surplus gold released through the issue of paper money in Europe during the war had gravitated to the United States, and after the end of hostilities had become the basis of an extravagant inflation which by May, 1920, had raised the price level to two and a half times that of 1913. It was not till then that a definite shortage of gold reserves was felt by the Federal Reserve System. Dear money and credit restriction followed, and by the end of 1921 the price level had fallen more than 40 per cent., at the cost of intense depression and severe unemployment.

These violent fluctuations were a caricature of the trade cycle. Their monetary character and their intimate relation to credit regulation were thrown into clear relief. In 1921 and 1922 the United States, as the only remaining gold standard country, was receiving all the surplus gold of the rest of the world. The Federal Reserve Act prescribed that the reserves of the system should not be less than 40 per cent. of the note issue *plus* 35 per cent. of the deposits, and the inflow of gold was raising the reserves far above these proportions. So far as the Act went, there was no obstacle to another inflation as extravagant as that of 1919 and 1920, perhaps even more so, for in 1919 there were still a few countries on the gold standard, which absorbed gold and hastened the shortage of reserves in the United States.

At this critical juncture the authorities in control of the Federal Reserve System deliberately departed from that mechanical subservience to reserve proportions which had previously been supposed essential to the art of central

banking. Under the wise guidance of Governor Benjamin Strong of the New York Bank they pursued a policy of stabilisation, which prevented any serious fluctuations of the price level from 1922 to 1929. More than once prices did begin to fall, and symptoms of depression appeared. But measures of credit relaxation quickly dispelled them. From 1925 onwards, the situation was complicated by the return of Great Britain and other countries to the gold standard.¹ It was a disaster for the world that Governor Strong died in the autumn of 1928, and the experiment came to an end.

And meanwhile the Genoa Resolutions have been thrown aside. They have not been altogether forgotten, at any rate in England. In introducing the Currency and Bank Notes Bill in 1928, the late Sir L. Worthington-Evans, the Minister in charge, defended the elasticity permitted by the Bill in the reserve requirements of the Bank of England by reference to the Genoa plan. And Lord Macmillan's Committee on Finance and Industry, which reported in July, 1931, likewise favoured the underlying principles of the plan.

But whatever Governments or Parliaments or experts may say, the opinion and the practice of central banks have become rigidly adverse to the Genoa plan. Far from regulating credit "with a view to preventing undue fluctuations in the purchasing power of gold," they have systematically excluded any such purpose from consideration, and have approximated to the purely mechanical system of gold reserve proportions, which was accepted by the theory if not by the practice of the nineteenth century.

That system might be made to work quite tolerably, provided there were no great discontinuity in monetary policy. As we have seen, it was not free from such discontinuities in the nineteenth century. The adoption of the gold standard by Germany in 1872, followed by the demonetization of silver was an example, though on that occasion the transition to gold was prolonged, and its

¹ See above, pp. 68-9.

effects moderated, just because the appreciation of gold placed difficulties in the way and increased the effort required to maintain a given gold parity.

GOLD AND MONEY SINCE 1914.

In the period since 1914 discontinuities of monetary policy have occurred on an unparalleled scale. First came the displacement of gold by paper money during the war. Then followed the inflation and deflation of 1919-22.

In the years 1922-24 the return to the gold standard was already beginning. But at that stage the countries concerned were content to build their currencies on reserves of foreign exchange. There was no absorption of gold to divert the stream that was flowing to the United States. By November, 1924, the American gold holding had reached \$4,529,000,000, in comparison with \$2,841,000,000 in April, 1920, and \$1,891,000,000 in June, 1914.

In 1925 Great Britain and a number of other countries re-established the gold standard. The movement continued in the succeeding years, and by 1928, when the French monetary law was passed, gold had become once again the recognised international standard.

At the beginning of this phase the Bank of England raised Bank rate to 5 per cent. British industry had been plunged in extreme depression by the precipitate deflation of 1921-22, and had since been gradually recovering under the influence of cheap money. But recovery was still incomplete, the unemployed numbering a million or more, when some degree of credit restriction was resorted to in the summer of 1924. The rise in Bank rate to 5 per cent. at the beginning of March, 1925, was, no doubt, intended to hasten the appreciation of sterling and so to facilitate the return to the old gold parity. But it was a conspicuous departure from former practice.

Ever since 1844 trade depressions had invariably been treated with cheap money. There were long periods with Bank rate at $2\frac{1}{2}$ or 2 per cent., and with only slight inter-

ruptions. A rate of 5 per cent. counted as high. Long spells at or above 5 per cent. (say ten weeks or over) hardly ever occurred otherwise than at times of great trade activity. In fact the only exceptions between 1866 and 1914 were in the years 1878 (twenty-two weeks) and 1884 (twelve weeks), and it is significant that these years were followed by the most severe unemployment recorded by the Trade Union statistics before the war (11.4 per cent. in 1879, and 9.3 per cent. in 1885 and 10.2 per cent. in 1886).¹

In 1925 Bank rate was put up to 5 per cent. for twenty-two weeks, and then, after an interval of seventeen weeks at $4\frac{1}{2}$ and 4, was again at 5 per cent. for seventy-two weeks. Financial opinion at the time explained this policy as intended to attract foreign money. But, whatever the purpose, the result could only be a compression of the consumers' income. And in virtue of the international position of London this occurred not only in Great Britain but in the rest of the world. The price level fell. The trade depression in Great Britain continued unrelieved and rather aggravated. Trade activity in the United States received a set-back. Severe depression and unemployment appeared in Germany.

In 1927, however, a change occurred. The United States, ever since 1924, had been opposing the British policy of credit restriction with measures of credit relaxation. In the summer of 1927 the credit relaxation was intensified. That may be regarded as the response of the American experiment in stabilisation to the new complication of an international gold standard.

At the same time France was maintaining the franc at a fixed gold value as a preliminary to a new monetary law, and the Bank of France found itself committed to buying foreign exchange to an enormous amount. Lavish French purchases of sterling bills and dollar bills tended to bring about cheap money and credit expansion in both London and New York.

¹ See my *Gold Standard in Theory and Practice* (2nd edition), p. 117, and *Trade Depression and the Way Out*, pp. 24-5.

The result was that for a time credit relaxation prevailed. Productive activity revived in the United States. The depression in Germany vanished. The "stabilisation crisis" which had appeared in a decline of production in France passed. The fall of prices in terms of gold was stayed and there was a slight rise.

In England alone the recovery of prices fell short of what was needed, and industry remained under the cloud of depression which had never been dispelled since 1921. The world price level was remunerative to industry in Continental countries which had devalued their currencies, and in the United States, where prosperity had provided the resources for great technical improvements. British industry on the other hand had to deal with a price level still substantially lower than that corresponding to the state of depression in 1925, when the gold standard had been resumed.

But in the world in general it may fairly be contended that the period 1925-28 had seen gold reinstated in its position as an international standard, without any scramble for gold or any serious fall in prices.

The purpose of the Genoa proposals had been stated to be "to avoid those wide fluctuations in the purchasing power of gold which might otherwise result from the simultaneous efforts of a number of countries to secure metallic reserves." The Genoa proposals, it is true, had not been put into operation. But the method of economising gold embodied in them, the supplementing of metallic reserves with reserves of foreign exchange, was extensively resorted to. Germany and other countries of Eastern Europe, which had been almost stripped bare of gold, did indeed absorb substantial amounts. But these were readily supplied because the credit relaxation in the United States released \$500,000,000 of gold from that country. A dozen countries that were returning to the gold standard acquired reserves of foreign exchange to the amount of some \$600,000,000. And the Bank of France, with powers of investment temporarily extended for the purpose, became the holder of foreign exchange amounting to no less than \$1,250,000,000.

THE DEPRESSION OF 1929-31.

The year 1929 saw a disastrous reversal of policy. In the course of 1928 the Federal Reserve system had already discarded the policy of credit relaxation in favour of restriction. The credit restriction which had prevailed almost without interruption in England since 1925 was intensified. The purchases of foreign exchange by the Bank of France were brought to a stop, and *reversed*.

France was restocking herself with currency. The Bank of France was once again subjected to the same narrow restrictions on its powers of investment as before 1914. Gold was the only asset practically available as backing for the additional currency. In the opening months of 1929 the Bank of France parted with 7 milliards (\$280,000,000) of foreign exchange. That made a gap in the Bank's assets which had to be filled by yet more gold.

In the period from the beginning of 1929 to May, 1931, the eve of the German crisis, France absorbed gold to the amount of over \$900,000,000.

The period 1929-31 was not one of a general scramble for gold. The only country other than France that absorbed any considerable quantity was the United States¹ whose holding rose from \$4,127,000,000 in January, 1929, to \$4,798,000,000 in May, 1931, an increase of \$671,000,000, or £138,000,000.

The first impact of any big demand for gold falls (when the gold standard is working normally) upon London. That is partly because the London discount market places the Bank of England's gold at the disposal of any one who has a sterling bill to sell, partly because London contains the principal bullion market of the world, into which flows a continuous stream of new gold from the mines (particularly from South Africa). A foreign demand for gold makes itself felt in the first instance by buying up the new gold from the mines, leaving none of it for the Bank

¹ Belgium perhaps deserves mention. She acquired £15,500,000 of gold.

of England. If that does not satisfy the demand, the price rises to the Bank of England's selling price, and gold is withdrawn from the Bank.

If the demand for gold appears too insistent, the Bank takes measures to restrict credit. In 1929 Bank rate was raised successively to $5\frac{1}{2}$ per cent. in February, and $6\frac{1}{2}$ in September. But dear money did absolutely nothing to check the French demand. Probably it did less than nothing. France needed a certain volume of currency, and it could not be supplied in any other way than by depositing gold at the Bank of France. The supply of bills eligible for rediscount could only be stimulated through an increase in the transactions for which such bills were drawn. Cheap money, which prevailed throughout this period in France, did something in that direction, but very little in comparison with requirements. Dear money in London tended, through its repercussions on world trade, to *diminish* transactions.

It might perhaps have been reckoned that a general recession in trade and a fall in prices would bring about a diminished demand for currency in France, but over any short period it is usually found that, in virtue of the stagnation of balances and the reduced velocity of circulation, the monetary circulation of a country is hardly, if at all, reduced by a depression.

Dear money, therefore, could not help to stem the French demand for gold. Could it meet the French demand by drawing gold from elsewhere?

In 1929 gold was flowing into the United States. This was attributed at the time to the attraction of foreign money to Wall Street, partly the money of banks and financial houses ready to take advantage of the high rates obtainable on call loans, partly the money of foreign speculators or investors seeking to buy American shares.

The successive advances of Bank rate in London in 1929 were undoubtedly designed for the American situation as well as for the French. And they reinforced the American policy of stopping speculation by stopping prosperity. The set-back in American industry began in the

summer of 1929, and the Wall Street crisis broke out at the end of October.

The rates on call money in New York quickly fell away. Foreign speculators became sellers of shares rather than buyers. The flow of gold was reversed, and there was a big export of it from the United States in November and December.

But that did not last. Depression rapidly gained momentum. Deflation was even more effective in the United States than in Great Britain. Not only was it reinforced by the psychological effect of the Wall Street crisis, but the consumers' income was more readily compressible in the United States, where industry had been active and profits high, than in Great Britain, where industry was already depressed. The result was to revive the American importation of gold.

After the Wall Street crisis, Bank rates were reduced all round. But the process was deplorably slow. The London and New York rates were not reduced below 4 per cent. till March, 1930. The vicious circle of deflation had by that time been effectively joined, and nothing but vigorous inflationary measures could have broken it.

It has been explained above (pp. 171-4) that depression may become so intense that it is difficult to induce traders to borrow on any terms, and that in that event the only remedy is the purchase of securities by the central bank with a view to directly increasing the supply of money. Matters had reached that stage by the middle of 1930.

A half-hearted attempt was made by the Federal Reserve Banks. They bought Government securities in the open market and raised their holding to the relatively high figure of \$600,000,000. But that was far from being enough. Depression in the United States rapidly gathered way, and the accumulation of gold there grew.

Meanwhile, in another direction, deflation was by no means ineffective in procuring fresh supplies of gold. Deflation meant a fall in the world price level. If the American wholesale index¹ be taken as a test, it fell from 97·5 in

¹ 100 in 1926.

September, 1929, to 71.3 in May, 1931. Gold had thus appreciated by 37 per cent. The result was to place a severe strain on debtor countries. Australia, Argentina, Brazil and some others suspended the gold standard, and drew on their gold reserves to meet external liabilities. Japan, having resumed the gold standard in January, 1930, adhered to it (till December, 1931) but also parted with large amounts of gold.

When the French and American demands for gold revived early in 1930, this "distress" gold became available, along with the new gold from the mines, to meet them. The French and American credit systems became purely passive. Discount rates fell to extremely low levels in both Paris and New York, but the depression had got beyond treatment by cheap money.

London also adopted cheap money, but not quite so decisively. Bank rate was not reduced below 3 per cent. till May, 1931. And the market was oppressed by the fear that credit restriction might become necessary at any moment. The insatiable demands of France and the United States for gold far exceeded the new output of the mines, and the market was well aware that only chance provided the stream of distress gold to make up the difference. Should that stream dry up, the result would be extreme stringency in London, *unless* the Bank of England obtained permission to increase its fiduciary issue.

Credit regulation works through the expectations of the market. Indeed, the bills actually being drawn and the advances being arranged at any moment are in respect of commitments already entered into some time before, and it is the bills to be drawn and advances to be arranged some days, weeks, or even months afterwards that any immediate change in the credit position will affect. Therefore a state of the market that threatens credit restriction in the near future may be quite as effectual a deterrent on enterprise as a restriction actually operative.

In 1930, when depression was anyhow intense, the apprehensions of the money market in regard to the gold position aggravated its effects.

The full severity of the disturbance is by no means revealed by the change in the price level. There was a competition among all countries on the gold standard in the compression of the consumers' income. Each had to keep pace with the others. Each was confronted with the shrinkage of demand caused by the action of the others, and had to compress its consumers' income and outlay to the point at which it did not attract an excess of imports. The compression could be effected partly through a fall of prices and partly through a decline of output. These were alternatives, and the greater the operation of the one the less would be that of the other. Their relative intensity would depend mainly upon the amount of margin available for the reduction of prices. If wages in a country were relatively low, or were readily susceptible of reduction, its industry could stand a correspondingly considerable reduction of prices without any great curtailment of output. Or if industry had built up a big profit margin by improved processes and organisation, it would gain the same advantage. French industry was in the former position; American industry was in the latter. The French franc had been stabilised at a value which made French wages very low in terms of gold in relation to world prices. And American industry had been developing the advantages of mass-production and every available technological improvement. In France a very considerable compression of the consumers' income was possible at no greater sacrifice than the elimination of abnormal profits. In fact, French wages were steadily *increasing* till near the end of 1930. In America the margin was not so great, and severe unemployment appeared at an early stage. But that meant that the compression of the consumers' income was all the greater.

It was this compressibility of the consumers' income that enabled France and the United States to absorb gold without effort in 1930 and 1931. England, on the other hand, entered the crisis in a state of depression, which people had begun to regard as chronic. Wages had been heavily reduced when the depression began in 1921 and

1922, and resisted further reduction. Industrial profits had been below normal ever since, and the shortage of profits itself impeded the introduction of improvements such as had contributed to the strength of American industry.

The result was that when the competitive compression of consumers' incomes all over the world set in, and the demand for commodities in international markets shrank, British industry, having the less margin within which to cut prices, suffered all the more heavily from unemployment. And this seriously weakened the monetary position of the country. Compression of the consumers' income was necessary in order to restrain the purchase of foreign trade products, and to prevent an excess of imports. But when producers failed to compete at the international price level, and the output of foreign trade products fell off, the contraction of purchasing power was to that extent associated with a loss of export trade, and the favourable effect on the balance of payments was lost. The only effective part of the compression of the consumers' income was to be found in the reduction of the prices and output of home trade products.

The effort of maintaining the gold standard by credit regulation would have been found prohibitive sooner than it actually was, if it had not been for the pre-existing favourable balance of Great Britain as an exporter of capital. The shock of depression and the collapse of industrial profits cut off the supply of investible funds at the source. The new external investment of the country fell from £100,000,000 in 1929 to £28,000,000 in 1930, and became a negative quantity in 1931. In this respect, however, the United States had a similar advantage, and absorbed gold all the more easily.

The countries from which the distress gold came were debtor countries for which the strain of the depression had been increased by the suspension of the inflow of foreign capital. This applied also to Germany and to the Eastern European countries.

The compression of the consumers' income everywhere

was compounded of two factors, the fall of prices and the reduction of output. In agriculture, output cannot be quickly reduced, and consequently the fall in the prices of natural products was much heavier than in the prices of manufactured goods. The former gave a truer measure of the severity of the depression than the latter.

Whenever a central bank took steps to contract credit in order to correct unfavourable exchanges, it was in effect *intensifying the depression*. People were often found to say that this would not necessarily follow. But, if it did not, the object would not be attained. Compression of the consumers' income was the indispensable means, and so long as wages resisted reduction that necessarily meant more unemployment.

Credit restriction was constantly advocated for the purpose of attracting foreign money for short-term investment. It is deplorable that the doctrines which prevailed on the subject of Bank rate from the days of Horsley Palmer to those of the Cunliffe Committee have been so far forgotten. It is hardly necessary to repeat that the support gained for the foreign exchange position by attracting foreign money is utterly precarious and delusive. And when credit is restricted for that purpose, the deadly effects of deflation are not the less operative because they are not designed.

In 1930 and 1931 producers all over the world found demand dwindling relentlessly. In desperate efforts to keep going they cut prices deeper and deeper. Their frantic competition for such demand as remained might be compared with the desperate struggles of the prisoners in the Black Hole of Calcutta to save themselves from suffocation by getting near the two small windows which were the only means of ventilation.

It is said that it was only by inadvertence that Surajah Dowlah shut up 146 prisoners in a cell 18 feet by 15 feet. He merely followed precedent in committing prisoners to the guard-room. In their agony the victims sought to bribe the guards to carry an appeal for mercy to Surajah Dowlah. But he was asleep and the guards

dared not awake him. He was very like a central bank.¹

THE CRISIS OF 1931.

As the depression gathered way there were added to the frightful social distresses arising out of unemployment the sinister disorders of a financial crisis. Traders all over the world found the money value of assets of all kinds steadily dwindling; profits were vanishing and turning into losses; bankruptcy, hidden or open, was epidemic. The menace of insolvency was communicated from the traders to the banks. The crisis culminated first in Austria with the failure of the Credit Anstalt in May, 1931, and then in June and July, spread to Germany. Advances to traders and industrialists to an uncertain but vast amount had become bad debts, and many of those still reputed ultimately sound were "frozen" and temporarily irrecoverable.

These are just the conditions which have caused financial crises in the past. A fall of prices gradually undermines the position of debtors. At first creditors do not feel their interests threatened. They have secured themselves with what looks like an adequate margin, and have nothing to fear from the minor fluctuations of the market. But when the fall of prices persists, a stage is eventually reached at which the position of some debtors, previously reputed sound and prudent, becomes doubtful.

Creditors have to make a difficult choice. To enforce payment of a debt at a time of severe depression will cause loss to the debtor. He cannot hope to borrow elsewhere, for if he cannot satisfy the existing creditor as to his solvency, how can he satisfy a stranger? He must sell goods or securities or other assets, which, in the exercise of his best judgment of the state of markets, he has hitherto decided not to sell. To do so, he must make price concessions. The creditor will hesitate to drive the debtor to this course.

¹ When, the next morning, he sent for Holwell, who had been in command of the garrison and was among the twenty-three survivors, Surajah Dowlah manifested no interest in the fate of the prisoners but wanted to find out where the East India Company's treasure was hidden.

Yet, if the unfavourable tendency of the market continues, his forbearance will result in a further deterioration of the debtor's position.

It is likely, therefore, that when creditors start calling up loans or refusing renewals on which the debtors had relied, a considerable number of debtors will already have reached a state of illiquidity amounting almost to insolvency. Action by a few creditors will be a signal for the others. A flood of forced sales will suddenly swamp markets and accelerate the fall of prices, and the latent insolvency will break out into open default and bankruptcy.

The crisis of 1931 differed from earlier crises in its international character. The earlier crises were international in the sense that the fall of prices and the forced sales affected world markets. But among the debts upon which default occurred a relatively unimportant part were due to foreign creditors. In 1931 the outstanding characteristic of the panic was that the foreign creditors of German and Eastern European debtors feared that the foreign exchange market would break down *even if the debtors remained solvent*. Indeed, so far as the most important class of debts was concerned, those due from banks or guaranteed by them, doubts as to solvency were to a great extent removed by the Austrian Government's guarantee of the Credit Anstalt's deposits and the German Government's guarantee of those of the Darmstädter Bank. The guarantee of the German Government ensured the provision of the means of payment in German currency, but it could not ensure the conversion of that currency into foreign currencies.

The panic took the form of the withdrawal of money by foreign creditors on a huge scale, involving a corresponding outflow of gold and foreign exchange from the reserves of the Reichsbank. The Reichsbank had already withstood withdrawals on a more moderate but still formidable scale in 1929 and 1930. The withdrawals in March and April, 1929, were said to be mainly of French and Belgian balances, and it was alleged at the time that they were a "manœuvre" designed to put pressure on Germany during the deliberations of the Young Committee on Reparations.

But this was the time at which credit restriction in England and America was suddenly intensified, and the loss of gold by Germany may well have been due in part to this circumstance.

In 1930 withdrawals of balances from Germany were indisputably traceable to a political cause, the General Election of the 14th September, 1930, which disclosed a sensational movement away from the moderate parties towards the extremists, the National Socialists at one end and the Communists at the other. The credit restriction that ensued played its part in intensifying the depression and bringing about the collapse of 1931. That collapse did not spring from political causes, though the threatened breakdown of the foreign exchanges could not be entirely dissociated from Germany's reparation liability. It was no doubt hoped that the suspension of the reparation liability for a year in accordance with President Hoover's proposal of the 20th June, 1931, would give sufficient prospective relief to the exchange position to restore confidence. But that hope was disappointed, and on the 13th July, after the Reichsbank had lost a milliard marks of its gold, and credits of \$100,000,000 from foreign central banks had proved insufficient to stem the demand, the entire German banking system was closed by decree. The banks did not fully reopen till an arrangement had been arrived at with the foreign short-term creditors (the Standstill Agreement of August, 1931) not to withdraw their money for six months.

The principal creditors concerned were American and English, and the storm of distrust beat in succession upon England and America. English industry had been in a state of unbroken depression for ten years. Revival from the great deflation of 1920-22 had been interrupted by the measures incidental to the restoration of the gold standard in 1924 and 1925. By the time intensified deflation started in 1929, no further progress had been made towards normal activity. The principal industries were unprofitable, unemployment remained at a high figure, the burden of taxation was overwhelming. The country was in no condition to

stand more deflation, yet that was the ordeal that it had to go through.

In July, 1931, the unemployed numbered 2,800,000, or 22 per cent. of the workpeople insured. The paralysis of industry was frightfully apparent in a decline of exports to little more than half what they had averaged in the preceding ten years.¹ At the same time there was an enormous decline in the profits and interest derived from British oversea investments, which form so large a constituent in the country's wealth, and still more in its balance of payments. The profits shrank, in common with all other profits, and the interest was in numerous cases threatened with default. Upon this state of economic weakness there fell the shock administered to the country's credit by the German default. London was both a short-term debtor and a short-term creditor on a huge scale. Apart from the usual mass of debit and credit balances with correspondent banks (complicated in the case of London by the number of big English banks carrying on business mainly abroad), the credits were mainly composed of acceptances on behalf of foreign clients, while the debts were mainly composed of sums deposited or temporarily invested in London by foreign banks, either for security (like the foreign exchange reserves of central banks) or as working balances of sterling or as profitable investments.

The German default disarranged this delicately adjusted mechanism by making a huge gap in the credit items. The result was to cause acute misgiving as to the safety of the debit items. There was no doubt as to the solvency of the big British banks and finance houses. What was feared was the suspension of the gold standard and the depreciation of the pound. London was in a very vulnerable position. Not only was a large part of her short-term assets suddenly immobilised, but those assets were in any case not in a form that could be called up in a day or a week. In past times the London acceptance business had always provided a valuable support for Bank rate. Monetary stringency

¹ A great part of this decline was due to the fall of prices, but the shrinkage of volume was still very great.

would reduce the volume of acceptances. But it would take several months for all existing acceptances to mature, and the process would be spread over that interval. Against a panic-stricken withdrawal of foreign balances from London it was too tardy a remedy. Such a panic-stricken withdrawal *had never occurred before*.

In the latter half of July the Bank of England lost £30,000,000 of gold. Recourse was had to credits raised in Paris and New York, first by the Bank of England (£50,000,000 on the 1st August), then by the Government (£80,000,000 on the 28th August). But meanwhile a new cause of loss of confidence was disclosed. The impairment of the economic position of the country was reflected in a serious reduction of the yield of taxation, and the relief of unemployment was throwing a vast new burden on the Exchequer. A portentous budget deficit came in sight, and heroic measures became necessary to meet it. The magnitude of the crisis was revealed by the political upheaval it caused. The Government was reconstructed and an interim budget introduced, providing for drastic economies and heavy additional taxation.

But the crisis had gone too far to be checked. Continental countries were well acquainted with the relation of monetary standards to budgets. They had become familiar with the calculations on which the devaluation of currencies was based. They knew how a value had to be chosen for the monetary unit which would make national indebtedness bearable, and would not inflict too severe a stabilisation crisis. According to these tests, the existing gold parity of the pound sterling had become absolutely intolerable. It was believed that the maintenance of the gold standard had become impossible, and that therefore every one who retained a balance in terms of the pound sterling till it was too late would be a loser. The stream of withdrawals became a torrent, the vast credits obtained were exhausted, and on the 21st September the gold standard was suspended.

The economic position of the United States was hardly less parlous than that of Great Britain. Indeed the decline of production and of employment from the prosperity of

1929 was so much greater that even after full account has been taken of the depression of British industry in that year, it is probable that conditions were distinctly worse in the United States than in Great Britain in September, 1931. The budget position was also extremely unfavourable. And the numerous failures among the banks (almost entirely among the small country banks, it is true) were the cause of serious concern. New York, like London, was the holder of vast foreign deposits, and had big sums, which had been regarded as liquid, locked up in Germany.

The withdrawal of balances from the United States began before the end of September. But the amount of gold in the country had reached \$5,015,000,000, and nothing that foreign creditors could do was likely to exhaust it. The gold was reduced to \$4,280,000,000 at the beginning of November, and then the withdrawals ceased.

The gold standard had been effectively maintained. But that meant that the depression was to continue gathering force.

The gold withdrawn from the United States went to Europe. It was all concentrated in France, Belgium, Switzerland and Holland, almost the only countries remaining effectively on the gold standard. Germany, and many countries of Eastern Europe, relied on control of the foreign exchanges to keep their currencies at par. For a country on a gold exchange standard, exchange control is in effect a suspension of the gold standard, in that it suspends the free convertibility of the currency into foreign exchange. The formal maintenance of parity in such dealings as are permitted does not invalidate this statement. Exchange control limits imports by restricting the means of paying for them. Those traders who are privileged to obtain them can make disproportionate profits by selling them in a limited market. The real value to them of the means of paying for the imports is therefore much above parity. Under such conditions no one will waste precious foreign exchange on buying gold, and consequently the absorption of the gold withdrawn from America was confined to the four countries named above.

Had their credit systems been working normally, it would have been quite impossible for them to retain the gold. Credit expansion would have resulted on a great scale and a rise of prices which would have relieved the monetary tension everywhere. But two years of overwhelming depression and discredit had induced in the bankers of Europe a state of morbid terror. They acted as if they were preparing for the Day of Judgment. The proceeds of liquidation of short-term investments, not only abroad but at home, were allowed to accumulate in the form either of hoards of notes or of enormous idle balances at the central banks. The cash in the four big French commercial banks (including their deposits at the Bank of France) rose from the normal 3 milliards or so, at which it had stood in 1930, to 12 milliards at the end of 1931. The commercial deposits in the Bank of France rose from 12 milliards in December, 1930, to 24 milliards.

There was also hoarding by individuals. Some held abnormally large quantities of paper currency, so that the note issues of the Bank of France and the other central banks expanded. Others reverted to the primitive practice of hoarding metallic gold. There was a brisk demand for gold coin and small bars for this purpose.

In the United States there was also hoarding of paper currency on a very large scale. In the two years 1930 and 1931 the failures of small banks (always a source of trouble in that country) far surpassed all previous records. The number of failures exceeded 3000, and the deposits involved exceeded \$2,500,000,000. Many of the depositors found themselves deprived of any banking facilities whatever within a convenient distance, and had perforce to hold their cash balances in the form of currency. And in many places where banks had survived, they were so mistrusted that hoarding became common.

From the beginning of 1930 to September, 1931, the United States had been importing gold, the total amount acquired having exceeded \$700,000,000. But all the time hoarding was proceeding, and sufficed to counteract the expansive effect which the inflow of gold might have been

expected to have. The increase in the monetary circulation was associated not with an increase but with a big decrease in consumers' income¹ and outlay.

By the end of October, 1931, all this gold had been lost. But the monetary circulation could not be contracted. The member banks were driven to obtain rediscounts on a large scale, and there ensued a credit stringency which was directly due to the hoarding.

Thus both in Europe and in America a new monetary demand for gold was set up, which aggravated the fall in the price level.

In England the first effect of the lapse from the gold standard was a rise in the price level and an infusion of new life into business. The deadlock in the credit situation arising from the reluctance of traders to borrow was broken. The wheels of business began to revolve once again, and the process by which the creation of credit generates incomes, and production and demand expand together, was for a moment successfully started.

But revival encountered an obstacle in a rise of Bank rate to 6 per cent. The creation of credit was soon as effectively checked by the unwillingness of lenders as it had been by the unwillingness of borrowers. Bank rate remained at 6 per cent. for four and a half months; the British price level started falling again; revival was stopped; and the return to cheap money in the spring of 1932 found business as stagnant as it had been twelve months before. As a monetary standard the pound had become only one degree less intolerable than gold itself.

MUTUAL SUPPORT OF CENTRAL BANKS.

In any review of the art of central banking it is natural at the present time to test the principles and precepts of the art mainly by reference to the disastrous events of the last

¹ We have not yet any estimate of the national income of the United States in 1931. But we know that industrial output was one-third less than in 1929, and the prices of manufactured products nearly 30 per cent less. The value of crops in money in 1931 was about half what it had been in 1929. Gross railway revenues fell by about one-third.

three years. This we must proceed to do. But while doing so, let us not forget that the underlying cause of the trouble has been *monetary instability*. The industrial depression and unemployment, the insolvencies, bank failures, budget deficits and defaults, are all the natural outcome of a falling price level.

The peculiarly international character of the crisis has already been referred to. It began with the withdrawal of foreign money from Austria and Germany. That occurrence may be compared to a run on a bank. It was a run on the entire banking system of a country.

A run on a bank within the limits of one country raises the question of the central bank's duty as the lender of last resort. If the bank affected is proved to be solvent, the central bank should advance to it whatever amount of currency may be necessary to meet the depositors' demands.

But when the run emanates from foreign depositors seeking to withdraw their money from the country, the power of the central bank to assist is limited so long as it is obliged to maintain the gold standard. As fast as the central bank advances money for the payment of such depositors, the money is withdrawn in gold or foreign exchange, and the central bank's reserves are reduced. Measures for rectifying the adverse foreign exchange position are too slow to be of value in such a case. If the central bank is to meet demands for accommodation in excess of its reserves it must itself borrow. The need arises for an *international lender of last resort*. Perhaps some day the Bank for International Settlements will be in a position to meet this need. But, as things are, the function can only be undertaken by a foreign central bank or by a group of foreign central banks in co-operation.

The need is not wholly new. In the past international co-operation has more than once been called for to reinforce the Bank of England's reserve with foreign credits, not on account of a panic among foreign depositors in English banks, but because a crisis abroad or some such pressure had threatened to exhaust the reserve through the operation

of the foreign exchange market. In 1839 acceptance credits were opened in favour of the Bank of England to the amount of £2,000,000 in Paris, and to the amount of £900,000 in Hamburg. In 1890, at the time of the Baring crisis, the Bank of England borrowed £3,000,000 in gold from the Bank of France, bills eligible for rediscount being arranged and drawn for the purpose. The Bank of France again performed a similar service in 1906 and in 1907.

Since the war, credits have on several occasions been provided for countries restoring the gold standard by the central banks of other countries. A credit of \$200,000,000 was provided by the Federal Reserve Banks in favour of the Bank of England in 1925 (besides a credit of \$100,000,000 by a syndicate of American Banks), though it never had actually to be drawn on.

When a central bank accommodates a commercial bank in difficulties, it has to be satisfied of the solvency of the latter. Similarly, when it comes to the rescue of a foreign central bank it has to be satisfied that the sums advanced can be repaid. Of the technical solvency of the foreign central bank there can presumably be no doubt. And, indeed, as the creator of currency, it can pay any liability *in its own currency*, whether it is solvent or not. But even if it is solvent, it may have difficulty in paying a liability *in a foreign currency*. And if it undertakes such liabilities in excess of its reserves, then in the event of the gold standard being suspended and its own currency depreciating, it may quite possibly incur such losses as to make it actually insolvent.

If the foreign credits granted to a central bank in an emergency are to be anything more than window-dressing, they must be allowed to exceed the remaining gold reserve. Otherwise they are merely a device for concealing the depletion of the reserve. If a central bank with a reserve of £50,000,000 receives credits to the amount of £50,000,000 with the implied condition that the reserve must be preserved intact, it is no better off, for it still has only £50,000,000 available.

It may be laid down as a rule of general application

that if credits are to be granted to a central bank in difficulties at all, they ought to be granted up to the full amount needed. There should be no limit. For if the amount granted proves inadequate, the exchange gives way after all. The sums already lent will then have been completely wasted, for there is probably no advantage in postponing the moment of breakdown, and once it has occurred the outstanding credits form a liability which complicates the situation and may be an obstacle to recovery.

In June, 1931, some courage would have been needed to grant Germany credits sufficient to meet her maximum need for foreign exchange. Germany was in an exceptional position. The inflation which culminated in November, 1923 (to say nothing of the war itself), had denuded the country of working capital. At a time of extreme discredit of the currency, traders are exposed to an intense demand for goods, which no advance of prices can moderate, and producers become deeply engaged in forward contracts to replace the goods sold. Their assets are all money, and when the money melts away to nothing, they find themselves without working capital.

In Germany, after 1923, the situation was further complicated by the slow growth of bank deposits. Confidence in the money of the country could not be restored in a moment. The bank deposits of the country, having been reduced almost to nothing, only recovered slowly, and the power of the banks to lend could not grow faster than the deposits. The result was that for several years the urgent need for working capital had to be met from abroad. It was met partly by way of acceptance credits, through which German imports were financed from London and New York, and partly by time deposits made by foreign banks in German banks at very high rates of interest.

These time deposits were to a great extent expressed in foreign currencies, and the result was that the German banks had made themselves liable for short-term debts in foreign currencies amounting to hundreds of millions of pounds, of which existing reserves could meet only a small fraction. Moreover, at a time of discredit the withdrawal

of foreign funds is likely to be reinforced by a "flight" from the currency among the natives.

Nevertheless it may be argued in favour of the grant of unlimited credits, that if they *had* been granted, there would have been no withdrawal of funds at all, for the risk of depreciation would have been eliminated altogether.

That does not quite dispose of the matter. The purpose of the credits would have been to support the gold standard. But suppose the gold standard had after all become absolutely intolerable, so that Germany was likely to insist on devaluing her currency in spite of having adequate reserves to maintain it. People who feared this would have withdrawn their money beforehand, and to that extent the credits would have been drawn on. Then if the collapse did come it might have been impossible to repay the credits. In fact, the sequence of events would, on that hypothesis, have been very much what it has actually been, except that the foreign central banks would have taken the place of the private creditors who have been parties to the Standstill Agreement. The obstacle to repayment would have been (as it is) not a depreciation of the currency but the maintenance of gold parity itself.

The gold standard *has* become intolerable, and is only tolerated because public opinion does not understand the situation well enough to associate the cause with its consequences.

The same arguments apply to the credits granted to the Bank of England. Either they ought not to have been granted at all, or they ought to have been granted to an unlimited amount. But there was the same risk. Unlimited credits would have enabled the country to remain on the gold standard, but that would have been only to prolong conditions that were rapidly becoming intolerable. It was the suspension of the gold standard that facilitated the repayment of the credits within a few months.

The principle that emerges from this experience is that a country subjected to a panic-stricken withdrawal of foreign money may legitimately be assisted with credits from foreign central banks, provided the country is in a

position to continue its existing monetary standard without undue strain, and in that case, the credits ought to be granted to whatever amount may be necessary without any definite limit; but that, if the effort of maintaining parity is excessive, no credits at all should be given, and the currency should be allowed to depreciate. A case of the latter type may, however, be modified to this extent, that if the currency is allowed to depreciate to a manageable value, credits may then very reasonably be provided to safeguard it against depreciating still further.

But the capacity of the borrowing bank to repay is not the only thing that the lending banks have to consider. They will be loading themselves up with assets, which, however good in themselves, will be entirely unmarketable, and for a period unrealisable. Their power of contracting credit in an emergency may be seriously impaired. If all the principal central banks of the world co-operate, this situation will not endanger the gold standard in any one of them. But it may leave them helpless to counteract an inflationary movement which would lower the world value of gold. That is one of the contingencies which they would have to consider before committing themselves to giving assistance. But if the whole trouble originated (as it did in 1931) from an *appreciation* of gold, the prospect of such an inflationary movement should be welcomed.

SPECIAL RESPONSIBILITIES OF LONDON.

One lesson to be learnt from the experience of the last few years is the survival of the old-established position of London as an international credit centre. Undoubtedly its pre-eminence has been modified by the advance of New York. But a restriction or relaxation of credit in London is still found to influence credit conditions in some degree all over the world.

This was illustrated at the very outset of the return to the gold standard in 1925. Bank rate was put up to 5 per cent., no doubt with the intention of raising the value of the pound, or in other words, lowering the English price level.

This object it achieved (at the cost of a recrudescence of trade depression), but it gave little help to sterling, because it lowered the world price level at the same time. As Ricardo said of the Bank of England a hundred years before, "almost the whole of the pressure has arisen from the increased value which their operations have given to the standard itself." In the years 1925 to 1927 London was the only gold centre that imposed high rates of interest, New York and the smaller centres consistently maintaining low rates. Yet even America experienced a set-back in the brimming tide of her post-war prosperity. And it was only after 1927 that the intensified credit relaxation in New York and the extensive purchases of exchange by the Bank of France, concurrently with a slight reduction of rates in London, reversed this tendency.

From the events of 1929 it is not possible to draw any certain inference as to the predominance of English credit policy, because London and New York were working together. But at the time American opinion did undoubtedly regard the rise in the Bank of England's rate to $6\frac{1}{2}$ per cent. in September, 1929, as a potent contributory cause of the Wall Street collapse in the next month.

And if we take a broad view of the gold situation both in 1929 and in the years of depression that followed, the outstanding fact is that it was through London that the abnormal demand for gold made itself felt. It was in London alone that the credit situation was closely related to the gold situation.

The effect of the absorption of gold on the monetary position of the world depended upon its effect on the London discount market. Had the London discount market been indifferent to the loss of gold, no fall in the world price level would have been involved at all.

When we are considering the art of central banking in relation to the prevention of undue fluctuations in the world price level, we are bound to attach a very special responsibility to London in virtue of the international influence of the London discount market.

It has been mentioned above that when the Wall Street

crisis occurred in October, 1929, there was undue delay in making the transition from high to low bank rates. This may be illustrated by a comparison with former occasions when such a transition was called for. The following table shows for every occasion since 1870 on which Bank rate has been at 6 per cent. or over and has been reduced to $3\frac{1}{2}$ per cent. or less, the number of weeks which the reduction to $3\frac{1}{2}$ per cent. or 3 per cent. took :—

Date.	Reduction from	Number of Weeks.	
		To $3\frac{1}{2}$.	To 3.
11th August, 1870 .	6	3	5
28th November, 1872	7	9	—
12th June, 1873 .	7	7	10
20th November, 1873	9	8	—
7th January, 1875 .	6	—	3
21st November, 1878	6	—	10
23rd February, 1882 .	6	—	4
20th February, 1890	6	7	8
4th December, 1890 .	6	7	8
11th January, 1900 .	6	19	22
2nd January, 1908 .	7	9	11
28th April, 1921 .	7	59	63
31st October, 1929 .	$6\frac{1}{2}$	20	26
18th February, 1932 .	6	4	9

No doubt the most striking case is that of 1921, when the progress from 7 per cent. to $3\frac{1}{2}$ per cent. took over a year. Coming as it did after the unprecedented continuance of a 7 per cent. Bank rate for fifty-four weeks, this was the cause of the tremendous deflation which by the beginning of 1922 had reduced the wholesale price level by half, and raised the number of unemployed to 2,000,000.

But the deflation of 1920-22 supervened on a period of wild inflation and intense activity, transcending anything that happened in the period 1870-1914. The deflation of 1929 was applied, so far as Great Britain was concerned, to a state of pre-existing industrial depression while in the rest of the world there was no serious inflation.

Only *once* in the period 1870-1914 did the reduction of

Bank rate from the maximum rate (whether 6, 7 or 9 per cent.) to 3 per cent. take more than eleven weeks. That was in 1900, when the rise of Bank rate to 6 per cent. (30th Nov., 1899) had been due, not so much to financial tension as to anxiety about the South African War. It may be mentioned that on that occasion Bank rate was reduced from 6 per cent. to 4 per cent. in only two weeks, and the reduction to $3\frac{1}{2}$ per cent. and 3 per cent. was no more than a tentative and short-lived move in the direction of cheaper money after a spell of seventeen weeks at 4 per cent.

In making comparisons with 1929 we can leave 1900 out of account altogether, and we can say that in all the other cases the contrast with the policy pursued in 1929 is most striking. In 1929-30 it took just six months to bring Bank rate down from $6\frac{1}{2}$ per cent. to 3 per cent., while in eight pre-war cases where the rate was reduced to 3 per cent., the average interval was 7.4 weeks. The reduction to $3\frac{1}{2}$ per cent. took twenty weeks, while in seven pre-war cases the reduction to that rate took an average of 7.1 weeks.

So marked a departure from previous practice cries out for an explanation. Yet it is difficult to see any circumstance affording a shadow of justification for the delay. The market rate of discount fell more rapidly than Bank rate, and the Bank of England tried in vain to make Bank rate effective. Foreign bank rates were falling, and showed a definite tendency to keep pace with that of Great Britain. The gold in the Bank of England increased steadily, and by the end of April, 1930, was £32,000,000 higher than at the end of October, 1929.

At the same time, the danger of the whole world lapsing into a state of severe depression was imminent and obvious. Prices were falling, and unemployment was growing ominously.

By the time Bank rate was reduced to 3 per cent. on the 1st May, 1930, the opportunity of escaping from depression by cheap money alone had passed.

When the Currency and Bank Notes Act was passed in 1928, permitting an extension of the fiduciary issue, Sir L. Worthington Evans instanced as one of the cases in

which the power of extension might be used the possible competition for gold among the central banks.

"It is quite true," he said, "that the absorption of gold by any country of considerable economic importance is a matter of international concern. The supply of gold for monetary purposes can only change very gradually, and the value of gold in terms of commodities is principally governed by the demand. The demand is created by the currency legislation of the various countries. If the central banks were to absorb gold without regard to each other's actions, they would find themselves competing for a limited supply, and a rise in the value of gold or, in other words, a fall in the price level calculated in any gold currency, would inevitably ensue. Should the Bank of England find that, owing to a world demand for gold, credit would be unduly restricted, not as a check on speculation, but to the injury of legitimate requirements, then the Bank can request the Treasury to extend the fiduciary issue and so free gold in the hands of the Bank for further credit operations" (Parliamentary Debates, 14th May, 1928, Col. 747).

The part of the speech in which this passage occurred received the express concurrence of the Bank of England.

A more exact fulfilment of the conditions described could hardly have been looked for than in the events of 1929-31. In consequence of a world demand for gold, arising from the action of central banks, credit was unduly restricted, and there resulted such injury to legitimate requirements that the gold standard simply broke down. Yet the apprehensions of the money market were founded on the belief that the Bank of England could not spare gold, and that belief presupposed that the power of increasing the fiduciary issue would *not* be resorted to "to free gold in the hands of the Bank for further credit operations."

Nor was the question one merely of the expectations of the market, important as these were as a contributory cause of depression. When depression is so severe that cheap money is not adequate to start revival, the only remedy is the purchase of securities by the central bank in the market. Had the Bank of England followed that course, the result

would presumably have been a loss of gold. And so long as it was not prepared to sustain such a loss, the Bank would feel precluded from extending its purchases of securities.

It might have been argued in favour of such purchases that, just because the London money market influenced credit all over the world, expansion in London would induce expansion in other centres, and, so long as expansion in all kept pace, there would be no loss of gold. The French demand for gold would have been moderated rather than increased by a revival which would have stimulated the supply of eligible paper. The same should have been true of the United States, and there moreover a credit expansion might have been expected to save many of the banks whose failure in 1930 and 1931 gave rise to currency hoarding.

It is *possible*, therefore, that a liberal open market policy on the part of the Bank of England might have checked the depression without any considerable loss of gold. But the Bank could not count on that. If a world-wide credit expansion were started, it would be likely to be more marked in the country of origin than elsewhere. And it must be remembered that the distress gold was wrung from the countries that parted with it by the depression itself. Had the depression been successfully combated, Australia, Argentina and Brazil might have remained on the gold standard. Japan might have been able to maintain parity without exporting so much gold. The result of credit expansion in London might have been to stop the flow of distress gold and to leave the French and American absorption little if at all abated.

There was clearly a risk of considerable losses of gold, and the pre-requisite condition of an expansive credit policy was therefore bound to be a readiness to lose gold. Whatever the motives of the Bank may have been, an expansive policy was not adopted. On the contrary, in the early months of 1930, when the redemption of a considerable amount of Treasury bills had caused a decline in discount rates, the Bank tried for a time to make Bank rate effective by *reducing* its holding of Government securities. That did

not last long, but for the rest of the year, though the restrictive policy was not persisted in, there was no important step in the other direction towards expansion.

Perhaps motives of caution suggested the conservation of the gold reserve. That is the kind of caution that spares water during a conflagration. The only purpose for which gold was held was the maintenance of the gold standard. But the restrictive policy itself was heading straight for the abandonment of the gold standard. The only serious threat to the gold standard was from the appreciation of gold, the fall in the price level. It was that which ultimately caused the breakdown in September, 1931. To save the gold standard, the vital need was to break the vicious circle of deflation that was causing this appreciation of gold. The *only* measure which offered any prospect of doing so was a lavish purchase of securities by the central banks. From this the Bank of France was precluded by its statutes. The Federal Reserve Banks had the requisite powers, but after June, 1930, stopped exercising them. The Bank of England had the widest possible powers, but did not take advantage of them. In February, 1931, after a year of neutrality, the Bank started once again reducing its securities to make Bank rate effective. That was the last phase before the crisis.

To measures risking a loss of gold it was sure to be objected that a weakening of gold reserves would impair confidence. In this there is undoubtedly some truth. There must be a limit beyond which a reduction of the gold reserve would make convertibility impossible. Theoretically that limit need not be reached till the gold reserve is completely exhausted. But in practice a central bank will probably insist on a suspension of gold payments at an earlier stage when some gold is still left. When an outflow of gold imminently threatens to reduce the reserve to this limit, so that people definitely fear a suspension, a "flight" from the currency will occur. There will be a "run" on the central bank for gold while balances can still be withdrawn without loss. When that occurs, *any* gold reserve, however great, may be exhausted.

In the conditions of 1930 and 1931, there was a growing distrust of the Bank of England's power to retain its gold. Nothing that the Bank could do would make any impression either on the French demand or on the American. So long as it was taken for granted that the Bank could not afford to suffer any considerable diminution of its reserve, this situation was full of danger. But had the Bank *deliberately* reduced its reserve requirements, with a view to releasing gold and relieving the stringency with which the world was threatened, it would have been faced with a manageable task. To retain £160,000,000 of gold, a frightful compression of the consumers' income and outlay was necessary, and it took visible form in the growth of the number of unemployed to two and three-quarters millions.

It is possible (though not certain) that a policy of credit relaxation would have reduced the amount of gold by half. But a loss of gold which would have caused apprehension or even panic if it occurred in spite of struggles on the part of the Bank to prevent it, would produce no such effect if it were brought about as a deliberate act of policy. Further, if the policy of relaxation had been successful and deflation had been checked, the gold that was left could have been retained without effort, and for that very reason the world's confidence in the maintenance of the gold standard would have remained unimpaired.

It is never safe to dogmatise about human behaviour. And as human behaviour is the subject-matter of all economic theory, we are bound to recognise that there is no conclusion in the field of economics that may not conceivably be stultified by conduct sufficiently irrational and perverse. But that is not a good reason either for abstaining from action and letting things drift in a crisis, or for deliberately taking what according to all rational standards is the wrong course.

Bankers (particularly those in charge of central banks) commonly assume that a loss of gold must cause loss of confidence. But that assumption is not confirmed by experience. Fairly numerous examples might be quoted

of countries which have suffered heavy losses of metallic reserves without any serious apprehensions being caused. Before 1914 the Bank of England was quite content to hold about £40,000,000 of gold, and from time to time faced considerable fluctuations in that very limited holding without the money market showing any sign of a loss of confidence.

What causes a loss of confidence is not the withdrawal of gold in itself, but the fear that the central bank will not be able to stop it. When the withdrawal of gold is brought about by the deliberate action of the central bank itself (as in the case of Japan in 1930, or the Netherlands in 1925) this fear does not arise. But a central bank which tries to retain a greater gold holding than the economic circumstances of the time will allow, and which has to resort to disproportionate efforts and sacrifices for the purpose, is risking a collapse and panic.

In 1930 and 1931, whatever might have been the risk involved in an expansion of credit at the cost of a loss of gold, a *greater risk* was involved in the restriction of credit. Deflation was making the gold standard impossible. It was relentlessly increasing the efforts and sacrifices required to maintain parity. It was also threatening the solvency of all debtors, and so breeding another kind of distrust.

THE AMERICAN POSITION.

If credit relaxation through open market purchases of securities was the one practicable corrective of the deflation of 1929-31, it may fairly be urged that this measure was more obviously available in the United States than in Great Britain. As has been mentioned, the Federal Reserve Banks did try it at first, but abandoned it after June, 1930.

For them gold was no difficulty. They started with an ample gold supply, and it was being steadily added to from the beginning of 1930 till September, 1931.

They were required (till the new Act of February, 1932), to cover their note issues exclusively with gold and eligible

bills. But they were free to hold Government securities against their deposits. During the period in question their deposits were usually about \$2,400,000,000, against which the statutory cash reserve of 35 per cent. would be \$840,000,000, leaving a fiduciary portion of \$1,560,000,000. The whole of that, together with the capital and surplus of the Federal Reserve Banks which exceeded \$400,000,000, could have been backed by Government securities. Even if something be abated from the total on account of Federal Reserve notes received by the Banks but not issued, against which gold or eligible bills must be held, still the holding of Government securities could have been raised to \$1,600,000,000 or \$1,700,000,000. That is to say it might have been \$1,000,000,000 greater than it was. The gold acquired by the United States from the beginning of 1930 to September, 1931, was \$730,000,000.

It is not solely a question of the effect of purchases of securities as a reinforcement of cheap money. The process may be viewed from another standpoint. The United States needed a certain stock of money composed of the currency in circulation and the deposits in the Federal Reserve Banks. That required an equivalent backing in some form. The backing had to be composed of gold, bills, and Government securities. The supply of gold depended on the foreign exchange situation, and the holding of Government securities depended on the initiative of the Federal Reserve Banks themselves. If these two were not adequate, the member banks would bring bills and commercial paper for rediscount. The effect of the purchase of Government securities in the first half of 1930 was to bring down the rediscounts to \$200,000,000, a relatively insignificant amount. But so long as the Government securities were displacing rediscounts, they were not displacing gold. The reduction of rediscounts tended to produce easy money, but in the conditions of 1930 that was not enough to start revival.

When rediscounts were once reduced to a minimum, gold and Government securities became the alternative forms of backing. So long as the total circulation did not increase, the acquisition of more Government securities would release

an equivalent amount of gold. It may be said that the total circulation did increase. Before the end of 1930 hoarding was beginning. But that does not mean that, had more currency been available, hoarding would have begun sooner or would have been carried further.

Once rediscounts were reduced to the minimum, the immediate effect of the purchase of securities would be to increase the deposits of the member banks at the Federal Reserve Banks. With a surplus of idle money, the member banks would endeavour to lend more. By the middle of 1930 the depression had become so intense that it was difficult to induce traders to borrow on any terms. But even when depression of the extreme type had taken hold, it may reasonably be contended that demand could have been revived by a *sufficient* surplus of idle money.

When hoarding began, a surplus of currency was required to satisfy the hoarders. They had to acquire that surplus by restricting their outlay, whether on consumption or on investment, and there resulted a falling off of imports both of goods and of securities, and an inflow of gold. If an adequate supply of currency had been created through other channels, this inflow of gold would have been dispensed with.

In June, 1931, when the German crisis broke out, the Federal Reserve system revived the purchase of securities, which had been abandoned a year before. But at that moment the hoarding, which had till then been on a relatively restricted scale, was enormously increased. The purchases of securities reached \$130,000,000 by September, but that was far from sufficient to offset the additional hoarding, and the policy was then once again abandoned.

A third attempt to expand credit by open market purchases was started in March, 1932. With the passage of the Glass-Steagall Act, allowing United States Government securities to be counted as backing against Federal Reserve notes, the purchases have been accelerated. The total holding of Government securities has been raised to \$1,841,000,000 (27th July, 1932), or \$1,100,000,000 above the level of September, 1931. Much may be hoped from this policy, if it is persisted in.

THE RESPONSIBILITY FOR THE DEPRESSION AND
CRISIS.

A scarcity of gold in the world need not cause deflation. Deflation arises when a scarcity of gold causes a shortage of currency, a shortage of currency causes a restriction of credit, and a restriction of credit causes a compression of the consumers' income and outlay. If the relation of currency to gold is so modified that there is no shortage of currency, the deflationary process is stopped at the source.

The accumulation of gold in France and the United States has frequently been attributed to abnormal capital movements, particularly to the receipt of payments in respect of war debts and German reparations, and in the case of France to an unwillingness to invest abroad. In certain respects, it is true, a creditor position enables a country to absorb gold. But the creditor position is not the decisive factor. A given value being assigned to the monetary unit, a certain supply of currency is required. If the supply is short, gold will be imported; if the supply is redundant, gold will be exported. The central bank can always prevent the import of gold so long as it can provide backing for the note issue in some other form. When it fails to do so, people have to supply themselves with currency by directing their savings to the accumulation of balances instead of to investment; there is a compression of the consumers' outlay. The apparent unwillingness to invest abroad is no more than a symptom of the shortage of currency.

Increased external investment will not necessarily afford any relief. Investors do not lend gold; they lend out of income. External investment (if it is anything more than short-term lending, an international "release of cash") is part of the consumers' outlay.

A creditor country must enlarge its consumers' income and outlay to the extent necessary to attract imports (visible and invisible) equivalent to the sums due to it. The enlargement of the consumers' income and outlay should, no doubt, be accompanied by an enlargement of the

monetary circulation, more or less in the same proportion. The United States, with a national income of about \$90,000,000,000 (in 1929), was receiving war debt annuities to the amount of \$200,000,000. What increase in the monetary circulation of \$4,800,000,000 was involved? France had a national income of 250 milliards of francs. How much of her monetary circulation of 68 milliards could be traced to an annual net receipt of about 2 milliards on account of reparations, *minus* war debts?

It has been argued that the inflow of gold is due to protective tariffs preventing payment from being made by way of imported goods. France and the United States, it is said, refuse to take payment in goods, and therefore their debtors are bound to send gold.

Now a protective tariff does raise the price level in a country relatively to the world price level, and so requires an enlargement of the consumers' income and outlay. It accordingly requires an increased monetary circulation, and if the monetary system is such that that cannot be provided without an importation of gold, gold will be imported. That is so, whether the country is a creditor or not. And it still remains true that additional gold can be dispensed with in so far as some other backing is found for the increased note issue.

Protection was no new thing, either in France or in the United States. It was intensified in both countries in certain respects in 1930, but it does not seem likely that the actual addition to the monetary circulation involved in either country by increased protective tariffs was considerable. And, even if it were, the need for gold was governed by the law and practice which determined the character of the backing for the note issues, and could have been moderated.

If we want to place the responsibility for the appreciation of gold, we shall find that it attaches to central banks and monetary authorities collectively. The value of gold is simply the resultant of their action.

It was France that absorbed gold on an inordinate scale. From the end of 1926, when the *de facto* stabilisation of the

franc began, till May, 1931, France acquired £250,000,000 of gold. The sum thus devoted to holding up gold puts into the shade all that has been spent in the same period by syndicates, pools, and other agencies on holding up supplies of wheat, cotton, copper, rubber, coffee and other commodities, in order to maintain prices.¹

On the other hand, the United States could have spared more gold, and had the advantage over France that the Federal Reserve Banks already possessed powers to provide alternative backing for the currency, and so to release gold up to a very large amount. It may be said that if legislation was required in France, that merely transfers the responsibility to the legislature. But it is not the business of central banks to ask for changes in the law, nor can legislatures be expected to initiate them unless public opinion has been prepared for the change. No one had ever anticipated that the monetary legislation of 1928 would lead to such an absorption of gold.

While France was to blame for absorbing gold, and the United States for not parting with gold, it was through England that the process of credit restriction, by means of which the scarcity of gold brought about a compression of the consumers' income throughout the gold-using world, took effect. London has a special responsibility in virtue of its power as an international centre. But even if £160,000,000 of gold was more than the country really needed, England was obviously in a less favourable position to spare gold than either the United States or France.

But whatever special circumstances may have modified the separate responsibility of each country, *the responsibility of all taken together* necessarily remains undiminished. The central banks are the source of the world's supply of money. It is their essential duty to adjust the supply to the world's needs. The supply of money is made dependent on the supply of gold, but the relation between the two is determined by the central banks and legislatures. The legislatures limit the freedom of the central banks. The residue of

¹ Since May, 1931, France has absorbed a further £216,000,000, but that has contributed to aggravate the depression, not to originate it.

freedom remaining to the central banks was quite sufficient to enable them to prevent the depression and crisis of the past three years. That it was not so used was the result partly of divided responsibility and partly of a want of far-sightedness.

Divided responsibility is the outcome not only of national divisions, but also of the established practice of entrusting the regulation of money, one of the most vital departments of Government, to a chartered company. The practice originated in England through the adaptation of the Bank of England, and became crystallised in the Bank Charter Act of 1844. The principle of that Act was that the issue of currency could be made completely automatic, and the regulation of credit could then be entrusted to a Banking Department, which would conduct itself like any other bank. Some of the advocates of the plan (G. W. Norman, for example) were inclined to say that the Issue Department ought to be a Government institution, but so long as it was purely automatic, the question of its association with the Bank or with the Government was of no practicable significance.

The Bank of England was governed, according to tradition, by a directorate chosen from the financial and mercantile houses which carried weight in the City of London. Similar developments have been seen all over the world. Central banks are entrusted to people with experience of commercial banking, or of cognate occupations, issuing houses, investment bankers, *banques d'affaires*, accepting houses, discount houses. Representatives of industry, commerce or agriculture are occasionally added.

A technical understanding of the art of central banking is not required as a qualification. If occasionally some economist or financier who enters the circle has made a study of the art, that is not regarded as a recommendation. Probably it adds little or no weight to his opinion in the eyes of his colleagues.

The art of central banking is something profoundly different from any of the practices with which it is possible to become familiar in the ordinary pursuits of banking or

commerce. It is a field within which a certain degree of technical knowledge is necessary, even to take advantage of expert advice. Yet it seems to be taken for granted that a central banker should be like a ship captain who knows nothing of navigation, or a general who does not believe in the Staff College.

The central banker is even reluctant to admit that there exists an art of central banking. If central banks *can* do these things, what a formidable responsibility rests on those who direct them! Nothing but complete scepticism as to the power of central banks to do anything whatever promises a quiet life for their directorates. If they cannot avoid taking decisions, then conformity with a few easily understood shallow empirical precepts will enable them to face criticism.

Yet it is only in recent years that this scepticism has become firmly established. A hundred years ago the directors of the Bank of England were not only interested in economic ideas but were actually taking the lead in evolving the art of central banking. After 1866 the art had become more nearly fixed, and perhaps it was the comparative smoothness with which credit regulation worked that gradually dimmed the memory of the underlying principles. The result has been not merely that the world has been insufficiently prepared to deal with the new problems of central banking which have arisen in the years since the war, but that it has failed even to attain the standard of wisdom and foresight that prevailed in the nineteenth century.

It may be conceded that since the Genoa Plan was not put into operation, there was no definitely formulated international obligation on any central bank or legislature to pay any regard whatever to the effects of its monetary policy on the value of gold. It is possible also that systematically concerted action among central banks to prevent fluctuations in the value of gold was impracticable. But that does not relieve any one of the important central banks from responsibility in the matter. For the individual action of each was at all stages an important factor

in the world situation. And since the value of gold was a matter of vital importance to its own people, the obligation of each central bank so to conduct itself as not to cause undesirable fluctuations was clear and imperative. While concerted wisdom may be necessary to preserve stability, the calamities of the past three years have been caused not by the mere absence of co-operation, but by a disastrously synchronised unwisdom.

THE CONDITIONS OF FUTURE STABILITY.

It is by no means to be assumed that stability cannot be attained without formal co-operation. While the Genoa Plan was still fresh in people's memories, there was a very general adoption of measures for economising gold. In the years 1924-28 when the re-establishment of gold as an international standard was effected, a dozen countries or more increased their reserves of foreign exchange by some £120,000,000 in all.¹ The credit for this movement belongs mainly to the Bank of England, and to the Financial Committee of the League of Nations, which were both in a position to exercise a powerful influence over the countries which successively adopted the gold standard and reformed their central banking systems. For the most part indeed the countries which economised gold by holding reserves of foreign exchange were doing so not under pressure but in the exercise of their free judgment, recognising that it was the wise and public-spirited course to take. But the great moral authority of the Bank of England contributed powerfully to support this attitude.

That was an exceptional period, marked by a very important transition in monetary affairs. The general resettlement of monetary systems required a recognition of the need for economising gold as a safeguard against a competitive scramble for gold. The recognition sufficed, without any formal agreement or convention.

¹ This is exclusive of the Bank of France, which acquired no less than £250,000,000 of foreign exchange. That was not part of its legal reserves, but it played the very important part of replacing the advances to the Government, which were being redeemed in connection with the monetary reforms.

Under more normal conditions even less actual co-operation would be required. If only the principal central banks would aim separately and independently at avoiding any disturbance of the value of gold, that would be enough.

The demand for gold in the world is dominated by the monetary requirements of the central banks. The industrial demand is much less than the annual supply. The condition of stability in the world value of gold is that the central banks must between them be willing and able to absorb the annual surplus over the industrial demand, without modifying the purchasing power of their currency units. And that ultimately means, without enlarging or compressing the consumers' income (except for such enlargement as corresponds to natural growth).

If there were an absolutely fixed relation between currency and bank credit and between bank credit and the consumers' income, then the problem would be one merely of allowing variations in gold reserves without corresponding variations in the monetary circulation. Currency, bank credit and consumers' income would grow as required by the growth of wealth and economic activity, and the annual surplus of gold would be acquired by the central banks, whether it exceeded or fell short of the proportional increase in the currency.

In practice there may be wide and rapid fluctuations in the ratio of the consumers' income to the quantity either of bank credit or of currency. If consumers' income is to be kept steady, then both credit and currency must be allowed to vary. They must be free from any rigid dependence on gold reserves. Otherwise a fortuitous expansion or contraction of the currency may involve a compression or enlargement of the consumers' income, to induce movements of gold that are really entirely unnecessary.

If there is no formal co-operation among central banks, we cannot assume that all without exception will be pursuing these aims. But even that is not necessary. A non-co-operating country will not be a serious disturbing factor unless either its discount market is one exercising considerable international influence, or it is likely to import or export gold on a very large scale.

Now there are very few discount markets of international importance. London and New York come first, Paris and two or three smaller European countries a long way after them, others play quite a subsidiary part. Paris might well aspire to share in the leadership, but so long as the Bank of France is precluded from taking the initiative through open market purchases and sales, this is hardly possible. Thus the Bank of England and the Federal Reserve Banks between them can regulate credit for the world.

If other countries absorb or release gold in greater quantities than England and the United States can deal with, a plan of stabilisation might break down. But the absorption or release of gold on a great scale does not occur except as the result of some definite discontinuity in monetary policy, such as the transition of Germany to the gold standard in 1871, the displacement of gold by paper money during the Great War, or the French absorption of gold in 1929-31. Hoarding of currency may produce an enormous absorption of gold, as in France and the United States in 1931, but hoarding is a characteristic of the later stages of severe depression, when deflation has caused insolvency, and insolvency has caused panic. It is not a difficulty in the way of a properly conducted policy of stabilisation, but is an incident of failure.

The ideal plan of currency reform would be a general international agreement on the lines of the Genoa Resolutions, with due provision for economising gold reserves, and a concerted endeavour so to apply the art of central banking as to avoid inflicting on the world the evils either of inflation or of deflation.

The cause of international monetary stabilisation has received a severe set-back from the events of the past twelve months. The reserves of foreign exchange by which gold reserves were economised in the years 1924-28 were composed chiefly of pounds sterling and American dollars. Foreign exchange is only an adequate substitute for a gold reserve so long as the currency in which it is expressed is at par with gold. The suspension of the gold standard by

England in September, 1931, resulted in the depreciation of all the sterling reserves of foreign central banks. In some countries there were sterling liabilities which could be set directly or indirectly against the sterling assets. But in the case of France the Government had to intervene to make good a loss of 2092 million francs, a sum which would have been sufficient to wipe out the entire capital and reserves of the Bank of France, and leave a heavy deficit uncovered.

The result of this experience was so great a distrust of reserves of foreign exchange that there was an extensive withdrawal of such reserves from the United States in October, 1931. The Belgian National Bank turned the whole of its dollar holdings into gold. The Bank of France reduced its holding of foreign exchange by 17 milliards¹ (between September, 1931, and July, 1932).

But the system is being attacked from another angle, particularly by French economists. It is being attacked on the ground that it has an inflationary tendency, in that it permits the issue of currency against assets which can be created for the purpose without being subject to any such limits as the supply of gold. That is to say, its advantage of economising gold would be dangerous if pushed too far. And if it were adopted *by itself* without any limiting principle, this would be a valid objection. But the Genoa Plan contains the essential limiting principle, the regulation of credit with a view to preventing undue fluctuations in the purchasing power of gold. The reserves of foreign exchange come into the plan merely to safeguard this principle against breaking down through a scarcity of gold.

How necessary they are has been demonstrated by subsequent experience. The general re-establishment of the gold standard in the years 1924-28 would have involved a heavy fall in the world price level, but for the big increase in reserves of foreign exchange referred to above. As M. Rist, one of the foremost opponents of the gold exchange standard, said, "it was reasonably to be expected that prices would go down if a big increase in new gold production

¹ That includes sterling sold but excludes the loss from the depreciation of sterling.

did not take place.”¹ The reserves of foreign exchange filled the gap in place of the big increase in new gold production, which was not forthcoming, and up to the end of 1928 the fall in the world price level was small. It was in 1929, when France began selling foreign exchange instead of buying it, and when London and New York entered upon an intensified credit restriction, that the fall of prices and the trade depression started.

The extended use of reserves of foreign exchange up to 1928 was undoubtedly inspired by a general desire to economise gold. And that desire did not go beyond what was needed to avoid credit stringency and a fall of prices. There was no inflation and no serious danger of inflation.² The limiting principle of Genoa was implicitly at work.

At the present time any measures for rehabilitating gold as an international standard are out of the question. Not a single country is left in which wages or debts are not utterly out of equilibrium with the world price level at gold parity. Unless the world price level rises, every country must choose either to suspend the gold standard, as so many have already done, or to carry out such a drastic reduction of wages as has not yet been faced anywhere, along with an extensive composition of debts. It is no use to think of reforming the gold standard till these changes have been completed.

It may be confidently predicted that there will presently be a big rise in the world price level in terms of gold. The accumulation of vast masses of idle gold through hoarding in the United States, France, Switzerland, Belgium and Holland is a thoroughly unstable condition. The hoarders, whether banks or individuals, are only willing to forgo interest on a great part of their capital so long as they are in terror of loss. A change of mind would bring the dissipation of the hoards, and a return of the normal velocity of circulation. How far the rise of prices would go before equilibrium would be established it is impossible to say.

¹ *The International Gold Problem*, p. 195.

² The speculation in Wall Street might have led to inflation, but it did not.

It would depend partly on the extent to which other countries would absorb gold.

When this state of things occurs, the question of regulating the world demand for gold will immediately become a practical one. It is to be hoped that by that time the hostility to the gold exchange standard will have abated. For nothing could be more irrational than that hostility. The tremendous calamities which the gold standard has inflicted on the world in the past three years have been directly traceable to the want of a device for economising gold reserves. The losses suffered from the depreciation of reserves held in sterling have been due not to any fall in the real value of sterling, but to the inordinate rise in the value of gold. The value of pounds sterling in terms of wealth was much higher in December, 1931, when the Bank of France dealt with the loss on its sterling reserves, than in 1927 or 1928 when it was acquiring those reserves. The fall in the gold value of the pound is merely one aspect of the fall in the gold value of *everything*. Some things have fallen in gold value less than others, because it has been possible to reduce output drastically. The value of pounds has been kept up through a compression of the consumers' income in Great Britain.

Thus the loss on holdings of sterling is not different in kind from the losses incurred on practically every item of wealth, fixed capital, working capital, stock-in-trade, land, houses, or consumers' stocks, all over the world, if valued in gold. It is not different in kind, and it is substantially less in degree.

And it is just such losses as these that can only be guarded against by measures for stabilising the value of gold. The depreciation of sterling, far from being due to a defect in the gold exchange standard, was directly traceable to that appreciation of gold which the gold exchange standard is designed to avoid.

It may be that a plan for stabilising the value of gold could be worked without any device for economising gold reserves. If the central banks are prepared to be indifferent to the relation of their gold reserves to their liabilities, they

can regulate credit with reference to the price level. That pre-supposes that the aggregate supply of monetary gold will be adequate not merely for minimum requirements, but for the provision of a large margin. But if the value of gold is raised high enough, this can be provided. For (once the hoards have been dissipated) the higher the value of gold in terms of wealth, the smaller will be the equivalent in gold of the supply of currency required for any country. In fact, either the currency unit must be devalued in terms of gold, or wages and incomes in terms of the unit must be reduced in the proportion in which gold has risen.

But even if this is feasible in principle, there is a great danger that the general return to the gold standard will not be effected without a renewed collapse of prices, unless there is a resort to reserves of foreign exchange. The countries remaining on the gold standard will not think of sterilising a great part of their gold till it is needed by the others. They are much more likely to expand credit gaily till prices have so risen that they need all their gold. If other countries, when returning to the gold standard, renounce reserves of foreign exchange and have to accumulate large quantities of gold, the result will be another heavy fall in the price level.

In fact, if no country can resume the gold standard without absorbing a large amount of gold, and if the countries already on the gold standard make no provision beforehand for it, the gold standard will remain unreliable for an indefinite period. The stabilisation of the purchasing power of gold requires much more systematic co-operation if the use of reserves of foreign exchange is dispensed with.

Nevertheless, there is quite a reasonable prospect that if the United States and Great Britain both aimed systematically at stabilisation, and were both willing to allow wide variations in their gold holdings, they could together surmount all the difficulties.

When the hoards in Western Europe begin to be dissipated, and the price level in terms of gold to rise, a moment will come at which the price level is in equilibrium with the American wage level. Then will come the opportunity for

the Federal Reserve System to absorb gold, as it did in the years 1921-24, and so to prevent its purchasing power falling further. The tradition of Governor Strong is by no means dead in America.

If that can be brought about, conditions will be favourable to a re-establishment of the gold standard in Great Britain. The selection of a new parity for the pound should be guided by the same criterion as I have suggested for the American policy, that is to say, the world price level should be in equilibrium with the British wage level. It might quite well happen that this equilibrium point would be at or near the old parity. And indeed it might actually be higher.

If the tendency of gold prices is upwards, then both the Federal Reserve System and the Bank of England will be absorbing gold. They must be willing to absorb it without relaxing credit, for they will want to check the rise of prices and keep them stable. They must therefore so adjust their reserve arrangements that between them they can absorb all the surplus gold in the world. That may run to several hundreds of millions of pounds. But even so there should be no real difficulty about absorbing it. And as other countries all over the world return to gold, England and America must let their gold go again.

If other countries can be persuaded to co-operate in such a policy, so much the better. If in the future other centres attain a position of international importance comparable to that of London or New York, their co-operation might become indispensable. But till that occurs the behaviour of other countries will affect the situation chiefly through their absorption or release of gold.

Ever since 1921 the Federal Reserve Banks have been willing to hold an enormous amount of excess gold, and they have been in a position to part with very large quantities whenever circumstances required. They parted with \$500,000,000 in 1927-28 and with \$700,000,000 in October, 1931. The recent Act enabling the Federal Reserve Banks to use Government securities as backing for the note issue is intended to make more gold disposable.

The Currency and Bank Notes Act, 1928, enables the Bank of England to extend or reduce its fiduciary issue with the consent of the Treasury (the extension being limited to two years). Provided that the gold standard is restored under conditions favouring a big influx of gold (as we have assumed), it would be easy for the Bank to start with a big surplus gold holding in the Issue Department, for which room would be made by the appropriate reduction of the normal fiduciary issue of £260,000,000. This surplus would then be available later on to satisfy the gold hunger of other countries returning to the gold standard.

The management of the British and American credit system with a view to preventing undue fluctuations in the purchasing power of gold would place a new task upon the central banks. But the new task would not be different in kind from that which they have always undertaken. The technical methods of credit regulation would be the same; at one time a low Bank rate and open market purchases to enlarge the consumers' income, at another a high Bank rate and open market sales to compress it. But, instead of enlarging the consumers' income only in case of an actual or threatened inflow of gold, and compressing it only in case of an actual or threatened outflow, the central bank would adopt the former measure in case of a downward tendency of world prices and the latter in case of an upward tendency.

It ought not to be difficult to detect these tendencies of the price level. The actual movements of price index numbers would only be a part of the evidence. The underlying cause of the price movements is the fluctuation of consumers' income and outlay, and it is that fluctuation that has to be corrected by credit regulation. A contraction of the consumers' income makes itself known not only by a fall in prices but by trade depression and unemployment. Credit expansion ought to be resorted to to correct an incipient trade depression, even if the evidence of the price level remains ambiguous. Similarly, an expansion of the consumers' income may take effect in excessive activity

of business, before any clear inference can be drawn from a rise in the price level.

If an exact interpretation of the situation from moment to moment were required, the task would be a very difficult one. But fortunately there is always plenty of time for tentative action, subject to correction as tendencies are more clearly revealed. The fatal defect of the old system of credit regulation by reference to gold reserves was that the gold reserves gave the signal for restriction or relaxation of credit far too late. The gold reserve position depended upon the fluctuations in the currency in circulation, and those fluctuations followed long after the fluctuations in consumers' income and outlay which caused them. Action was taken not weeks or months, but *years* too late.

GOLD RESERVES.

That brings us back to the question of gold reserves. According to nineteenth-century doctrine gold reserves governed credit policy. The duty of the central bank was to preserve the gold standard by maintaining convertibility of the currency into gold. Failure took the form of an exhaustion of the gold reserves. The task might be described as the maintenance of adequate gold reserves.

The Act of 1844 started the fashion of prescribing gold reserves by law. That did not in itself facilitate the task, but it had the advantage of locking up a part of the gold reserve so that it could only be used in extremities and at the cost of a breach of the law. Credit policy was based on the *disposable surplus* of gold, and failure would mean the exhaustion not of the entire gold holding but of that surplus. The principle was the same whether the law limited the fiduciary issue or prescribed a minimum proportion of gold to note circulation or to liabilities. The Act of 1844 adopted the principle of the fixed fiduciary issue. But the controversies as to the working of the Act were really concerned with the desirability of *any* system of statutory reserve requirements. The objection raised to the Act was that it compelled the Bank of England to limit

its lending in order to comply with the law at a stage at which it still held plenty of gold. And the defence was that when a shortage of the disposable gold, represented by the notes in the Banking Department, precipitated a crisis, the second line reserve could be made available by an emergency suspension of the law, just as a fire alarm is made available by breaking the glass. Both the objection and the defence would apply equally to the minimum proportion system.

In the middle of the nineteenth century the principles of credit regulation were still being thought out. It was very natural to look for some kind of reinsurance against the failure of a system which was still insufficiently tried and incompletely understood. But there is no longer any reason for keeping central banks in leading strings. A central bank which is entrusted with the task of maintaining the gold standard can correct an unfavourable exchange position by means of credit regulation in a moderate time and at the cost of a moderate loss of gold. If the situation is complicated, either by an extremely adverse factor in the balance of payments such as an excessively onerous external debt, or by a disproportionate appreciation of the value of gold, then the time will be prolonged and the loss of gold increased. But that will be because a more severe effort will be involved, and a greater compression of the consumers' income.

In settling the amount of the gold reserve, the question to be decided is, how great a compression of the consumers' income may the country have to undergo? It is no use providing a gold reserve to support a compression more severe than the country can bear. It is not easy to estimate with any approach to precision how great a gold reserve is required on this principle. But assuredly some countries go far beyond it.

The voice of caution may be heard saying that the reserve must be big enough to provide against an extensive withdrawal of balances, a "flight" from the currency. But this is unattainable. It is not a question merely of the withdrawal of foreign-owned balances. Once distrust of the monetary standard has definitely gained a footing, native-

owned balances will be withdrawn too. There is the same risk of loss.

Even if the central bank covered the whole of its obligations with gold, that would still not be enough. The depositors of the commercial banks would draw out gold, and when the commercial banks had exhausted their reserve deposits at the central bank and the demands of their depositors still persisted, they would have either to stop payment or to borrow from the central bank. To save the entire banking system from breaking down, the central bank would be compelled to fulfil its essential function of the lender of last resort, and would thereby create new obligations uncovered by gold for the express purpose of enabling panic-stricken depositors to withdraw gold.

It is therefore *impracticable* to provide against a flight from the currency. All that it is worth while to aim at is a gold reserve great enough (with some margin) to meet the demands that may arise in the interval between the initiation of a credit restriction and its becoming effective.

The Macmillan Committee recommended the substitution of a new reserve law for the fixed fiduciary issue of the Act of 1928. They suggested that the Bank of England should not be permitted to allow its gold reserve to fall below (say) £75,000,000, except temporarily by permission of the Treasury (sec. 228). If, as the Committee contemplated, the Bank held normally at least as much gold as at present, it would have a much greater disposable surplus, and the disposable surplus would not be liable to be encroached upon by an increase in the note circulation, whether seasonal, cyclical or arising from growth of business.

If there is to be a second line reserve at all, kept out of reach of the Bank except at a time of emergency, this would seem to be the best method of securing it. The dissociation of the gold reserve from the note issue would be a distinct gain.

Were the system to be generally adopted, so that the statutory gold reserves in the various countries would not increase except as a result of new legislation, the danger of a future scarcity of gold would be appreciably diminished.

With a fixed fiduciary issue an increase of a country's note circulation by a million currency units requires an addition of a million units of gold. If a 40 per cent. gold reserve is required, 400,000 units of gold would have to be added. Under the Macmillan Committee's plan *no* gold would be required.

If central banks follow the practice of regulating credit mechanically by reference to their reserves, the fixed fiduciary issue system tends to moderate the violence of the trade cycle, in that an expansion of the note circulation encroaches more quickly on the stock of gold. The Macmillan Committee's plan would leave the central banks free, so far as gold reserves are concerned, to expand credit indefinitely. (The committee guard against this by applying a maximum limit to the note issue, independently of the gold reserve.)

A more elastic system of gold reserves is only desirable if accompanied by a policy deliberately directed towards stabilising the value of gold. And, no doubt, it is unlikely to be adopted by the world generally, except in conjunction with such a policy.

Gold reserve policy is not in practice necessarily governed by the formula enacted by law for calculating the minimum gold reserve. We have already seen how in the case of France a great accumulation of gold has been due rather to the limitations on the investing powers of the Bank of France. The statutory requirement is a gold reserve not less than 35 per cent. of demand liabilities, and the gold at present held is 76 per cent.

If it were the general practice to limit gold reserves to what is really necessary, an enormous proportion of the world's supply of gold would become redundant. The problem of stabilisation would for many years be one not of economising gold but of absorbing redundant gold.

Unfortunately we cannot count upon any such moderation. Even when the present abnormal conditions have passed, the absorption of excessive amounts of gold by some countries is likely to continue. The world will not be secure against a scarcity of gold. And the danger will be

all the greater if the anticipated big decline in the output of gold from the mines after 1940 takes place.

Eventually the gold exchange standard may become indispensable to any plan for stabilising the purchasing power of gold. The reserves of foreign exchange held need not be very great. Nor need they even be part of the statutory reserves, like gold. Every central bank must have a surplus reserve in excess of its statutory reserve (like the reserve in the Banking Department of the Bank of England), and this surplus reserve may be largely composed of foreign exchange instead of gold.

It is undesirable that the foreign exchange holding of any one central bank should be swollen to the dimensions of that held by the Bank of France after 1928. Standing at more than £200,000,000, it was far bigger than could possibly be needed for a contraction of the currency, and it involved the Bank of France to an inconvenient extent in operations in the London and New York money markets. Foreign exchange reserves, in so far as they are composed of bills, require perpetual supervision, as bills mature and have to be replaced.

All that is needed is a reserve of foreign exchange which will suffice to cover any casual adverse international balance. The system once generally accepted, central banks might be expected regularly to deal with a favourable exchange by buying foreign assets at a price just within the gold point, and so preventing an inflow of gold. Only if a country were involving itself in an adverse exchange position by indulging in inflation would its neighbours insist on taking gold from it. Subject to that salutary exception, no country under such a system need ever feel anxiety about gold.

STABILISATION WITHOUT GOLD.

Undeniably plans for stabilising the value of gold may meet obstacles in the traditions and prejudices which determine gold reserve laws, and in discontinuities of monetary policy such as the world has suffered from since 1914. We must therefore give some consideration to the

alternative of monetary stabilisation *without* a metallic standard. Reference has been made above to Professor Irving Fisher's proposal for varying the gold contents of the monetary unit. Mr. Keynes's plan, in his *Tract on Monetary Reform*, is the same in principle, in that he would have the central bank continue the practice of buying and selling gold, though at varying prices to be fixed, on the analogy of Bank rate, from time to time.

If the greater part of the world were using gold, it would probably be convenient to include the fixing of the price of gold in the process of currency management. But it would not necessarily be so. The essential method of currency management would be the use of credit regulation to enlarge or compress the consumers' income and outlay, on exactly the same lines as with the gold standard.

The gold standard absolutely depends on the power of the central bank to regulate the purchasing power of the currency unit by this process. If we suppose the gold standard to be discarded on the ground that the purchasing power of a gold unit is too fluctuating, then clearly the power of the central bank should be used to make the purchasing power of the unit as stable as possible.

It is then no longer necessary to regulate credit by reference to the foreign exchanges. An adverse balance of payments can be left to correct itself through an adverse exchange, so long as that does not involve a rise of the price level. The adverse exchange takes the place of the compression of the consumers' income as the means of reducing the community's purchasing power in international markets.

It is sometimes argued that whereas a central bank can regulate credit effectively so long as there is a metallic standard, its power to do so is destroyed or at any rate seriously impaired when there is only a "paper" standard. This is a mistaken view, for which there is no foundation, either in theory or in experience.

Without doubt there are certain special dangers to be guarded against, particularly that of currency speculation. So long as the gold standard is firmly established, there is no room for any appreciable profit from speculation in the

currency. But when there is no fixed parity with foreign currencies, considerable profits immediately become possible, and many people who have to make or receive payments in terms of foreign currencies become speculators in spite of themselves. They have to hedge against exchange losses. A speculative market necessarily comes into existence, and, once in being, it offers opportunities to the irresponsible speculator.

Now the speculative seller of a country's currency is essentially a *borrower* in terms of the currency. He assumes the obligation to pay a sum in that currency at a future date, and at the same date to receive an agreed equivalent in a foreign currency. He becomes a debtor in the former currency, and a creditor in the latter. The dealer in foreign exchange with whom he bargains becomes a creditor in the former and a debtor in the latter, and will proceed to protect himself by acquiring an asset in the foreign currency against a liability in the home currency.

Dealers in foreign exchange are for the most part banks, which can create a supply of their own currency in the form of deposits. Consequently, speculative sales of a currency themselves increase the supply of the currency. This is a particular application of the inherent instability of credit.

Similarly, speculative purchases of a currency lead to the liquidation of bank deposits and diminish the supply of the currency.

But a central bank ought to have no difficulty in guarding against such tendencies. Discredit of the currency may reach such a pitch that no Bank rate will be high enough to check speculation. (The rate of 90 per cent. imposed by the Reichsbank in 1923 was a mere trifle in comparison with the profits to be made from the depreciation of the mark.) But even so the central bank can refuse to lend, and the other banks will be prevented from creating additional deposits for want of cash.

And under more normal conditions, when the fluctuations in the foreign exchanges are kept within moderate limits, the central bank has no difficulty in checking any incipient tendency to speculation. The function of the speculative

element in the market is to modify the value of the currency unit, as measured by rates of exchange, by reference to a forecast of future tendencies. If this forecast diverges from the intentions of the central bank, the central bank can apply the appropriate corrective. For being the source of all money, it can come into the market as an *unlimited* buyer or seller of currency. If its intentions are *known* to the market (through the formulation of a definite policy, for example, of price stabilisation) the speculators' forecast of future tendencies will itself be guided by a reading of those intentions. Monetary history contains numerous examples of countries that have suspended the convertibility of their currencies and remained on a paper régime for periods extending to many years, without a collapse or even any serious fluctuation of the monetary unit being threatened. The notorious cases of monetary collapse have all been due to an unbearable financial strain at a time of war or revolution. This was true of the Continental currency during the American War of Independence, of the French Assignats, and of the Confederate currency in the American Civil War. It was equally true of the wild inflation that followed the Great War in the greater part of Europe.

The last-named experience has left behind it in the countries which underwent it a repugnance to inflation which amounts to an obsession. For once the evils of unstable money were presented to the multitude in a form in which the causal sequence was too obvious to be misapprehended. When a Government paid its way by printing paper money without limit, no one could doubt that unlimited depreciation and discredit must result.

CENTRAL BANKS AND INFLATION.¹

Nevertheless much misunderstanding has arisen about inflation. The popular view sees the accursed thing sometimes in the Government borrowing from the central bank,

¹ For a fuller treatment of the subject of Inflation see my *Currency and Credit*, chaps. xiv. and xv. (3rd edition); also *Monetary Reconstruction*, chap. iv.

sometimes in the central bank holding Government securities even though bought in the open market, sometimes in any increase in the fiduciary note issue, or again in any increase in the note issue as a whole. But clearly the essence of the evil is an undue enlargement of the consumers' income and outlay, and a consequent rise of prices or depreciation of the currency unit. The extension either of the note issue, or of the fiduciary issue, or of the Government securities held against the note issue may be associated not with any enlargement of the consumers' income, but either with an increased production and consumption of wealth or with a diminished velocity of circulation. Or again the enlargement may be no more than sufficient to correct a previous compression of the consumers' income and to restore equilibrium.

What has to be guarded against is any interference from a Government in need of financial accommodation with the due discharge of the central bank's task of credit regulation.

That does not mean that the Government is not in any circumstances to borrow from the central bank. It is usually taken for granted that the Government will have its principal banking account with the central bank. Its balance is bound to be large in comparison with other balances and to fluctuate. Fluctuations in the balance interfere just as much with the regulation of credit as borrowing from the central bank. Before the Revenue Act of 1906, whenever there was a big surplus on the British budget, there was an accumulation of idle money in the Exchequer balance towards the end of the financial year, and sometimes a perceptible restriction of credit resulted.

In recent years the French absorption of gold has been augmented from time to time owing to very large balances being held at the Bank of France to the credit of the Treasury. At the end of 1930, besides Treasury and sinking fund balances of 13 milliards, the *Caisse des Dépôts et des Consignations* had a balance of 5 milliards. These public balances of 18 milliards had to be covered by corresponding assets, which, failing eligible bills, had to be gold. The

seasonal reduction of public balances has regularly brought relief from the absorption of gold in the spring of 1929, 1930 and 1931.

From the standpoint of credit regulation it would seem to be desirable to avoid these complications by placing the Government balances with some other bank. The Macmillan Committee, however, was only following an opinion almost universally accepted as axiomatic, when it said that "in practice the tasks which have been imposed upon the Central Bank make it imperative that it should hold the account of the Government, for the financial operations of Government are conducted on a scale so great as seriously to derange the money market unless special measures are taken to counteract the inconveniences which result from the inflow of revenue or the temporary easiness which results from interest and dividend payments" (Sec. 30).

Yet this is a palpable misconception. The receipts and payments of the Government only derange the money market *because* the Government keeps its balance with the central bank. When a large sum of War Loan interest is distributed at the beginning of June or the beginning of December, it is transferred from the Exchequer account to the accounts of the stockholders at the joint-stock banks. The result is a sudden increase in the cash of the joint-stock banks at the Bank of England. If the Government balances were kept with one or more of the joint-stock banks, the payment of interest would merely modify the distribution of cash as between one joint-stock bank and another, and no disturbance of the money market as a whole would be involved.

There are minor difficulties about entrusting the Government banking accounts to competitive banks, as American experience has shown. It may be difficult to be impartial among rival banks, and, since it is invidious to distinguish which of the banks are of unimpeachable credit, it may be necessary to require collateral security for Government balances.

But the real reason why Governments always want to bank with their central banks is that they want to smooth

the path to borrowing from them in case of need. A competitive bank cannot lend large sums to the Government unless it is sure of support from the central bank. If the Government is itself a customer of the central bank, it is almost a matter of course that the central bank will grant the Government accommodation.

The institution of an "independent central bank" is commonly recommended as a safeguard against inflation. A chartered company, responsible only to its shareholders, will, it is supposed, be in a better position to resist demands for advances to the Government than a bank which is itself directly under the control of the Government.

For this view there is little, if any, foundation in experience. Governments do not want to borrow from their central banks (apart from quite legitimate overdrafts for a few days) except at a time of overwhelming financial strain, and at such a time the central banks *never* resist their demands.

A lax finance minister will incur deficits, and will cover them by increasing the country's floating debt. But additions to the floating debt do not necessarily include advances from the central bank. The Treasury bills or other short-term instruments which the Government has to sell are very desirable investments for the competitive banks, and so long as room can be made for them by reducing the assets of the competitive banks under other headings, no expansion of credit or monetary expansion is involved. When the floating debt threatens to become excessive, a loan will be issued to fund it, and then the tale of financial improvidence can begin all over again.

It may be a generation before this rake's progress begins to impose any serious strain on the unfortunate country which suffers from it. And it will not be till the strain becomes serious that any difficulty will be found in placing funding loans. It is only then that the Government will come to the central bank for assistance.

If the directors of the central bank are people of prudence and integrity (a condition that is hardly likely to be fulfilled in a country where chronic budget deficits are tolerated),

they may insist on budgetary reforms as a condition of an advance. But I do not think this has ever occurred anywhere.

Any country in which the standards of financial prudence and wisdom are not deplorably low will refuse to tolerate a succession of deficits. It will be a matter of course that the finance minister will make a *bona fide* effort to balance his budget, and, if his expectations are disappointed, he will be subjected to criticism. Deficits will only be occasional, there will be no progressive or cumulative increase in the floating debt, and long-term loans will be issued only to cover genuine capital outlay.

Under such conditions, even a heavy non-recurrent liability, such as may arise from an earthquake or flood, can be met without exhausting the resources of the capital market, and therefore without requiring advances from the central bank. Hardly any emergency short of war or revolution can impose such a strain on the national finances as seriously to threaten inflation.

In face of the exigencies of war, no reliance can be placed on an independent central bank to resist demands from the Government. At such a time the Government is accepted by public opinion as the sole authoritative exponent of the national needs. If the directors of the central bank raise objections to the Government's financial measures as being inflationary, they will be overborne. To call inflation "unsound" will be to invite the retort that war requires exceptional measures, and that the operations of the Government cannot be restricted or delayed for a moment for want of the means of payment.

In themselves protests are useless, nor in practice do central banks make them. If Governments are ever deterred from inflationary finance in time of war, that will be because the finance ministers themselves are persuaded that inflation will defeat its own object. It quickly impairs the country's power of raising resources *even during the war*. The need is for advisers, whether in the central bank or outside it, who can explain how this occurs. It is not the independence of the central bank, but its technical competence and insight that will gain a hearing for its protests.

In 1914 the principal belligerents embarked on inflationary expedients with a light-hearted disregard of consequences. Without waiting for the strain of war expenditure to make itself felt, they resorted to plainly inflationary devices for making advances for the relief of embarrassed traders and industrialists. The Bank of England and the Bank of France were encumbered with premortgage bills. A special issue of paper money was employed in Germany in advances to traders. All were infected with the inflation virus, and it was never expelled during the war.

When currencies had reached the last stages of collapse in various countries of Central and Eastern Europe, and schemes of reconstruction were being put into operation in the years 1922-24, the Governments had become addicted to paper money as if it were drink or drugs. The ordinary fiscal machinery, so far as it required the monetary unit to retain its value over any period of more than a few weeks, had broken down, and the daily expenses of Government were being met by further issues of paper money.

A great effort was required to raise the essential revenue, and it was at the same time thought advisable, partly in order to remove temptation from the Government, and partly in order to gain the confidence of the public, to preclude the central bank from making any more advances to the Government, and entrench its resistance with statutory prohibitions.

It is in the countries that have been through this ordeal that the obsession against inflation is particularly strong. But it exists in countries like France, where the currency, though heavily devalued, never actually collapsed. And even in England, though the public in general are free from it, it seems to prevail among experts and leaders of economic thought.

The terror of inflation is due to a want of a sense of proportion. The memory of the inflation remains, but the conditions which brought it about have been forgotten. The inflation in Germany that culminated in the collapse of the mark in 1923 was the result of nine years of overwhelming financial burdens, aggravated by improvidence

and unwisdom, by war and blockade, by revolution within and insistent pressure from without. Even so, the depreciation of the currency was successfully checked more than once. Between June, 1920, and May, 1921, the mark was depreciating, it is true, relatively to the pound and the dollar. But that was because deflation was raging in England and America. The price level in Germany was actually falling, so that the mark was *appreciating* relatively to commodities. The mark, in fact, was for the time being a more stable unit than gold. That was no mere chance fluctuation. It lasted for almost a year, and was the direct result of Erzberger's budgetary reforms.

The collapse was renewed in May, 1921, when a peremptory demand for a large cash payment on account of reparations was made, and again after the assassination of Rathenau in July, 1922, and the last stage was reached with the occupation of the Ruhr in 1923. But even in 1922 and 1923 there were short intervals of stability which might have been prolonged but for these political shocks.

To compare the case of any of the countries which have been driven off the gold standard in the past three years with that of Germany, and to threaten them with a monetary collapse comparable with that of the mark, is to betray a complete misconception of the *order of magnitude* of the causes at work.

When I was five years old, I was shown a picture of a ship sinking, and it was explained to me that a ship is all right so long as the water is *outside* her, but, when it gets *inside*, down she goes. Shortly afterwards I was crossing the Channel, and a few drops of rain fell on the deck. With the relentless logic of five years, I jumped to the conclusion that the ship would sink.

Exaggerated fears of inflation have done very great harm during the present depression and crisis. Many countries, particularly those of Central and Eastern Europe which previously suffered from monetary collapse, have clung to the semblance of a gold standard long after they have been quite incapable of sustaining the reality. They have been involved in a system of interference with imports through

exchange control, quotas and prohibitive tariffs, of which the principal result has been that each country has increased the difficulties of all the rest.

At the same time, proposals made in England or America to relieve the depression by bringing about an expansion of credit have been met again and again with the objection that they would cause inflation. Every plan for improving the ventilation of the Black Hole is rejected on the ground that it would admit air. That is a degree of ineptitude which Surajah Dowlah, with all his moral and intellectual shortcomings, never attained.

A simple criterion can be applied to determine whether any proposal for expanding credit is or is not legitimate. So long as it does no more than bring the price level into equilibrium with the existing wage level, it is beneficial. The inflation is desirable. Indeed, people who regard the word inflation as necessarily having a bad sense would call this degree of expansion "reflation."

But the moment credit expansion goes so far as to require an increase in wages to put prices and wages in equilibrium, then there is an illegitimate inflation. The symptom of such an inflation is excessive profits. What is desirable is a price level which just makes industry remunerative and fully employed. Any further rise of the price level is a departure from equilibrium.

The evils of inflation are great, and are beyond dispute. A serious and permanent reduction of the purchasing power of the currency unit is a flagrant injustice to the creditor class, including the holders of fixed interest-yielding securities. The losses fall with special severity on small investors, who are less likely to diversify their holdings with ordinary shares, on the holders of life insurance policies, and on savings bank depositors. The result may well be to discredit the practice of saving among people of small means, with demoralising effect. In the interval of transition there is likely to be a lag of wages behind prices, so that real wages will be depressed. Wherever a sum of money is involved in any statutory, customary or contractual right or obligation, the effect becomes altered, and either injustice is done or

the arrangement has to be revised. So long as the ultimate extent of the depreciation of the currency is unknown, no revision can be accepted as final.

Yet, great as are these evils, they are not merely equalled but definitely surpassed by the evils of deflation. Inflation reduces or destroys the value of fixed interest-bearing securities; deflation reduces or destroys the value of ordinary shares. And deflation may also destroy the value of many fixed interest-bearing securities, by driving the debtor concerns, and even Governments, into default. Inflation reduces real wages; deflation causes unemployment. But whereas inflation stimulates production, deflation checks it. Deflation causes a definite loss of real wealth in the form of decreased production. Deflation also wrecks the financial structure of the community by involving what are normally sound and prudent businesses in bankruptcy. Not only are the debtors brought to ruin and the creditors to loss, but going concerns, living organisms of the economic system, are destroyed.

Much has been said recently (particularly in France) about the "rigidity" which prevents the adaptation of the economic system to a change in the value of the currency unit. And it may be freely admitted that, if wages could be immediately adjusted to such a change, a great part of the injury could be avoided. Not only would there be less unemployment, but there would be less bankruptcy, for one cause of bankruptcy is the disparity between prices and costs.

But the rigidity of wages is a stubborn fact. It can be overcome, if at all, only by the pressure of distress. Even if every one concerned were willing to meet the situation by cuts in wages, it would be quite impossible to say within wide limits just how great the cuts ought to be. And in any case the most perfect adaptation of wages would not entirely remove the evils of deflation, for the increase in the burden of debts would still cause injustice between debtor and creditor.

Thus the theory that deflation would be innocuous but for a perverse rigidity of wages is quite untenable. Pliable

wages would alleviate the trouble, but would not cure it. And if we have to choose between stable money and pliable wages, what ground is there for preferring the latter? Wages are, in any case, a difficult problem of modern economic organisation. With goodwill and understanding in any industry, the problem can usually be solved satisfactorily. But what prospect is there of solution if it requires an understanding not only of the circumstances of the industry, but of the monetary position as well? It is not the business either of workmen or of industrialists to understand monetary theory.

In fact instead of relying on pliable wages to mitigate the disasters of deflation, we should rather reckon the friction generated between employers and employed by unstable money as one more count in the indictment against it. This friction, it may be mentioned, arises from inflation as well as from deflation.

If we compare the consequences of the inflation of the years 1919-23 with those of the deflation of the years 1929-32, I do not think it is open to doubt that the economic loss and misery caused by the latter are very much the greater. If the public fully appreciated what has happened, their obsession on the subject of inflation would soon be matched by at least as stubborn an obsession on the subject of deflation. Deflation, however, is in one respect more difficult to understand, for it arises from a change in the value of gold, whereas inflation, as soon as it goes beyond moderate limits, is clearly revealed in a change in the value of money relative to gold.

AN INTERNATIONAL CENTRAL BANK.

Up to this point I have had little to say of the Bank for International Settlements at Basle, founded in 1930 as the outcome of the Young Committee on Reparations. The functions actually conferred upon the Bank have been very limited, but hopes have been expressed by those who recommended its foundation, and by others since, that it would develop in the direction of becoming a Central Bank of central banks.

This would be a new departure in the art of central banking, and deserves examination. It is by no means to be taken for granted that an exact parallel can be drawn between an international central bank and a national central bank. The national central bank, in virtue of its function as the lender of last resort, is the fountain of currency. But within the boundaries of one nation currency is the creature of law. Even if the country uses gold coin as currency, and the national central bank is precluded from meeting a demand for currency in any other way than with gold, still the legislative power is in the background and in case of a threatened breakdown the remedy is to be found in an emergency paper currency.

An international central bank can only help so long as an international medium is required; it cannot supersede the ultimate remedy of an emergency issue, which remains a matter of national not of international jurisdiction.

It can act as the holder of reserve deposits for the national central banks, provided that they are enabled to reckon deposits with it as part of their reserves. Even if a national central bank has no power to reckon anything but metallic gold in its statutory reserve, it can still economise gold if it holds some credit asset which is regarded as equivalent to gold, to supplement its surplus reserve. For example, if the Bank of England requires a reserve in the Banking Department of £50,000,000, and if a deposit with the International Bank is regarded as equivalent to gold, it might hold such a deposit to the amount of £30,000,000 and reduce its notes in reserve (representing disposable gold) to £20,000,000, without any modification of the fiduciary issue.

What is to be the nature of a deposit in an international central bank? A deposit is simply a debt, and a debt is expressed in the currency unit of the place at which it is payable. The deposits in the international bank might be payable at its head office and therefore in the currency of the country in which the head office is situated. The Bank for International Settlements is situated in

Switzerland. The Swiss franc is a currency that is respected all over the world. But it is not exempt from monetary troubles. Like all other European currencies it has at times been off the gold standard since the war. And though the Swiss banking system possesses a big international business in Central and Eastern Europe, Switzerland is a very small country, whose currency can hardly be made the foundation of all the currencies of the world. Indeed it would not be desirable in the interests of the Swiss themselves that they should not be free to legislate in regard to their own monetary affairs without taking into account the consequences to the international central bank, and all the vast credit structure that would be associated with such an institution. The same objections would apply in some degree even if the bank were situated in London and New York, and used a currency which in any case plays a predominant part in international business.

The international central bank might have branch offices in all the principal financial centres of the world, and the place at which a deposit would be payable would be a matter for agreement with the depositor. Each national central bank would choose to have the deposits to its credit payable in currencies other than its own, so that it could use them in case of need to support its own currency in the foreign exchange market. This would be a natural development of the gold exchange standard as contemplated in the Genoa Plan and as practised in recent years.

An alternative would be that the deposits should be payable in *gold*. They would not be debts in the strict sense at all, but contracts to deliver a commodity. The *place* at which the gold is to be delivered would presumably be a matter of agreement.

The question of the character of the international central bank's obligations cannot be dissociated from that of its assets. If it is to be anything more than a repository, holding a metallic reserve exactly equal to its obligations, it must make a practice of creating deposits

against credit assets. It may play the part of lender of last resort to its customers, on the analogy of a national central bank, or it may buy bills or other securities in the open market.

If its deposits are payable in the currencies of the principal financial centres, it will probably seek to marry each liability (so far as not backed by gold) with an equivalent asset in the same currency. Under normal conditions, this should work quite smoothly. A national central bank would draw on the deposits to its credit at branches of the international bank in other countries to support its currency in case of an adverse exchange, but would at the same time contract credit to redress the adverse exchange just as if it were losing gold. The deposits in the international bank at any centre to which the foreign exchanges were favourable would tend to be drawn upon, and so to diminish. That would be provided for by realising a sufficient amount of the assets held against them.

In case, however, of extreme foreign exchange pressure against any country, the national central bank would want to borrow from the international bank. It would want to borrow foreign currencies and its liability would, no doubt, be in the currencies borrowed. But in the circumstances assumed, the obligation of the distressed central bank would not be marketable or realisable. So long as the trouble were confined to one country it would probably be quite manageable. The international bank could afford to carry a certain amount of frozen assets. But if many countries were suffering from extreme discredit, the international bank could not afford to help them except in close co-operation with the countries remaining unaffected. In substance, it would have to arrange that the central banks of these latter countries would relieve it of its frozen assets. Thus it would be the lender *not* of last resort, but of last resort but one.

If the international bank's deposit liabilities were gold obligations, the same difficulty would arise. And in addition, there would be the problem of finding gold investments to hold against the gold obligations. The ordinary market-

able securities of the world are not usually gold values. A gold clause is a common feature of bonds in the United States. But even a gold clause, ensuring payment in "gold coin of the existing weight and fineness," is by no means an absolute safeguard. In 1917 the United States suspended the gold standard through a prohibition of the export of gold. The bondholder could insist on payment in gold coin, but he could not realise the premium on gold without breaking the law.

Even if an effective gold clause could be adopted, with adequate undertakings by the countries concerned to allow the export of gold, the creation of a new or special demand for gold securities, leading possibly to a regular quotation of a small premium on such securities over those without a gold clause, would be an undesirable development.

So long as the gold standard behaves satisfactorily, the gold clause may be a harmless formality, practically forgotten by debtor and creditor alike. But at a time of crisis it may become a terrible embarrassment. The gold clause has been extensively resorted to in Germany since the collapse of the currency in 1923. Ever since 1930 the gold standard has been threatening the German economic system with ruin, and its suspension is urgently needed. It may be that the obsession about inflation would in any case prevent that essential measure being taken, but, however that may be, the prevalence of the gold clause is an additional obstacle. The depreciation of the mark would involve those debtors who are bound by the gold clause in difficulties.

The question of gold deposits may be considered from a different point of view. Gold investments are only needed in so far as the gold deposits are going to be actually drawn out in gold. But gold is only required to settle international balances, and for that purpose a gold deposit with the international central bank would serve just as well as metallic gold. Why should not the national central banks deposit *all* their gold with the international bank and leave it there? So long as the industrial demand for gold falls short of the new output, the international bank would only

have to buy gold, never to sell it. A deposit with the international central bank, though nominally it would be payable in gold, would not in practice have to be payable at all. No one would want to convert it into anything except itself, and the character of the assets held against it would be a matter of academic interest only. Credits with the international bank would become the basis of all currencies throughout the world, and the practice of the international bank in creating credit, whether by buying gold, by buying investments, or by lending to national central banks, would become the decisive factor in determining the purchasing power of all currency units.

Under those conditions it would be qualified to act as the universal lender of last resort. There is no denying, however, that that would be an invidious duty. The international bank could not afford to lend blindly to any national central bank which chose to apply. The need of the national central bank might be the result of its own imprudence or resort to inflation. The international bank must be prepared to distinguish between such a case and one in which the need to borrow arises from some adverse factor in the balance of payments or other legitimate cause. It may be very difficult to ascertain the facts. In case of war the system might break down altogether.

Clearly an international central bank might be a very valuable instrument for stabilising the world price level. It might help to rehabilitate the gold exchange standard, and it would provide international control just of the kind that is wanted. But in order that it may contribute to the discharge of this vital need, it is essential that those who govern it should believe both in the desirability of a stable price level and in the possibility of achieving it. So long as the Bank for International Settlements is wholly in the hands of central bankers who believe that every fluctuation in the purchasing power of gold is an Act of God, which cannot be modified by any human intervention, nothing whatever is to be hoped for from it.

CONCLUSION.

The central bank, in virtue of its function as the lender of last resort, is the source of currency. It regulates the supply of currency by regulating its lending. By restricting its lending it causes the other banks to restrict their lending, and so it compresses the consumers' income and outlay. By relaxing its lending it causes the other banks to lend more liberally, and so it enlarges the consumers' income and outlay.

Consumers' income and outlay are the essential factors in the process by which the monetary system is regulated. All that is said, in the course of monetary theory, about the quantity of money or of bank credit, about the volume and value of transactions, about velocity of circulation, or about the price level, is simply one method or another of approaching these fundamental factors, and recording their fluctuations inferentially. In a static theory of money, which analyses equilibrium conditions, the price level may legitimately be treated as fundamental. The reciprocal of the price level measures the value of money. But the art of central banking is *dynamic*. If equilibrium exists, nothing requires to be done; the only problem then is to avoid disturbing the equilibrium. Whenever positive action is called for, that is because equilibrium has been departed from, and then the art is concerned not merely with the conditions that will be satisfied when equilibrium has been restored, but with every step in the transition thither. During the transition an inflation may not be adequately reflected in a rise of prices, or a deflation may not be adequately reflected in a fall. Wide disparities may develop between the price levels of different groups of commodities, between prices and wages, between prices of primary products and of manufactured products, between the prices of consumption goods and of capital goods, between wholesale prices and retail prices. When that happens, it is impossible to point to any acceptable measure of the value of money. These different measures are inconsistent with one another, and are not susceptible of a significant average.

But the vagaries of the different price levels can be reduced to order if they are compared not with one another but with the consumers' income. When the consumers' income changes, a proportional change in all price levels becomes due. But there is always some obstruction to this proportional change, a lag which is different for different groups of values.

The usual task put before the central bank is the maintenance of a prescribed parity in the foreign exchanges. It performs this task by enlarging or compressing the consumers' income and outlay according as the currency unit tends to rise above the prescribed parity or to fall below it.

When for any reason the supply of gold is short of the world demand for it, the gold standard countries compete for gold by compressing their consumers' incomes. When the supply of gold becomes redundant, there results a competitive enlargement of consumers' incomes, as each country tries to get rid of its surplus gold.

In either case there result these disparities of price levels. When equilibrium is restored, the disparities are (more or less) eliminated. But the *immediate* objective of the regulation of credit is the adjustment, not of the price level, but of the consumers' income and outlay.

This is equally applicable to the case where the central bank has to deal with a change, not in the world demand for gold, but in the country's own balance of payments. The balance of payments has to be corrected by a suitable change in the consumers' income and outlay, though in that case the treatment may be complicated by an international movement of money seeking temporary investment.

When consumers' income and outlay are increased or diminished, the appropriate changes in the various price levels are brought about by the play of markets, and are in themselves beyond the competence of the central bank and the banking system. The fundamental adjustment is that of *wages*. The other disparities are for the most part consequential upon the disparity between wages and prices. If wages are too high, not only does unemployment result, but profits are encroached on, savings are reduced, and the

producers of capital goods suffer a disproportionately severe depression.

Unemployment is the sign that a reduction of wages is called for. When the central banks compress the consumers' income and outlay, they are giving the signal for a reduction of wages. As Mr. Keynes has said, "there has been no more harmful confusion within the field of monetary practice than the belief that Bank rate has done its work when it has produced a fall in the price level, irrespective of whether this is due to selling at a loss or to a decline in the costs of production" (*Treatise on Money*, vol. i., p. 208). "If prices are low because entrepreneurs are accepting losses, and not because costs of production have been reduced, . . . and if the pressure on the supply of money has only been relaxed by the expedient of reducing output and employment, then monetary equilibrium will continue to require the indefinite prolongation of chronic unemployment" (pp. 207-8).

The Macmillan Committee (of which Mr. Keynes was a member) says of Bank rate policy:—

"Its efficacy depends in the first instance on reducing the profits of business men. When in the effort to minimise this result, output and employment are contracted, it depends on decreasing the amount of business profits and increasing unemployment up to whatever figure is necessary to cause business men either to decrease their costs by additional economies, or to insist on, and their workers to accept, a reduction of wages" (Report of the Committee on Finance and Industry, section 221).

When under a gold standard a central bank contracts credit and compresses the consumers' income in order to correct a departure from equilibrium in the foreign exchange market, the problem of adjustment put before the industry of the country is no more than the accommodation of the level of wages to the international price level. If the international price level is stable, the extent of the requisite adjustment is limited.

But when the central banks of the gold standard countries are, between them, taking measures which are calculated to

reduce the world price level, the adjustment involved is limited only by the severity of the measures taken. In such circumstances, ought they not to give due notice to the world that the appropriate reduction of wages is an essential part of the policy they are pursuing? The central banks cannot compel employers and employed to make the appropriate reduction. But if they made a public statement on the subject, they would give industry the opportunity to make the transition smoothly, and would place upon the employers and employed the responsibility for a failure to do so, and for the consequent burden of unemployment.

Unfortunately a timely warning of that kind is not practicable. It would presuppose that the directors of central banks took cognisance of the probable consequences of their own actions. It would be an admission of responsibility for those consequences. It would open the door to criticism, and endanger the system of entrusting unrestrained control of the credit system to chartered companies outside the framework of Government.

Central banks cannot announce that they intend to bring about a reduction of wages, because they never do intend it. Their intentions are always strictly short-sighted.

The gold standard is an essential part of the system. It gives the central banks a simple immediate objective. When an alternative to the gold standard is suggested in the shape of a managed currency, a paper currency regulated with a view to stability of the price level, the objection most commonly raised is that the task of managing such a currency is beyond the capacity of the authorities who would have to be entrusted with it.

The gold standard has acquired a certain sanctity. That is not entirely due to fetish-worship. The gold standard does fulfil the very important requirement of maintaining approximate fixity of the foreign exchanges, an advantage not to be lightly sacrificed. It is quite right that the gold standard, once established in any country, should not be abandoned, even under considerable pressure, without some effort.

But that does not mean that it is the bounden duty of

a country to cling to the gold standard regardless of consequences, in the spirit of Casabianca. The view that a pecuniary obligation is an obligation to deliver gold, and that any departure from that obligation is a default, has no foundation in law or morals, in history or economic theory. Pecuniary contracts in any country are regulated by the domestic law of the country, and are subject to its legislature. If we ask what is legal tender, we find the answer in some statute, and we find in every country in the world that the nature of the legal tender has been modified by law from time to time in the past.

When the gold standard is established, its maintenance is entrusted by the legislature to the central bank. The legislature probably lays down some limitations in regard to the operations of the central bank, the amount of its gold reserves, and the character of its assets. Thereafter it washes its hands of the whole matter of currency, and assumes that the central bank will maintain gold parity successfully.

The central bank, having received its marching orders, marches. Any ulterior aim, outside the immediate objective of gold parity, it can disregard. Even if, by failing to foresee the effects of their actions, the central banks involve the world in a violent appreciation of gold, which in one country after another makes the gold standard impossible and leads to its abandonment, each central bank can plead that it has no separate responsibility for what is the resultant of the collective action of all. It has done its best to maintain parity, and has been definitely unable to do so.

Critics of the Bank of England have been found (particularly among Continental economists) to say that the gold standard ought not to have been abandoned in 1931 without first raising Bank rate to a substantially higher level than the $4\frac{1}{2}$ per cent. at which it stood at the time. This view betrays a complete misapprehension as to the circumstances.

In the first place, at a time of distrust of the currency, the efficacy of a high Bank rate in attracting foreign money, or in inducing foreign depositors and lenders not to withdraw their money, is completely in abeyance. At best that is a stopgap expedient, which postpones the trouble at the cost

of aggravating it ; in the summer of 1931 it certainly would not have been operative.

Secondly, the difficulty in which the country found itself was wholly due to the appreciation of gold. If a high Bank rate was to bring any relief, it could only be by further compressing the consumers' income and outlay in Great Britain and compressing them more than in other countries. Even if this had been accomplished, it would only have saved the gold reserve of the country at the cost of more unemployment and heavier budget deficits. But in all probability the high Bank rate in London would have so reacted on foreign countries that their consumers' income and outlay would have been compressed at least as much, and nothing would have been gained.

As has been shown above, the only thing that could have saved the gold standard was a *relaxation* of credit in London, even at the cost of a big efflux of gold.

The gold standard once suspended, the central bank is left without any principle to guide it except its bounden duty to re-establish the gold standard as soon as practicable. It devolves upon the legislature to give it new marching orders. If the central bank were able and willing to take a wide view of the public interest, it could be left to take measures at its discretion. But it is the business of a Government to take a wide view of the public interest ; it is not the business of a chartered company.

We have defined the central bank by its function as lender of last resort, not by its function as bank of issue. But the privilege of note issue, when it exists at all, almost necessarily devolves on the central bank. If there were no paper money, the commercial banks could select or constitute a central bank as they chose. Any bank to which they entrusted their reserves, and on which they drew to pay clearing balances, would become the central bank. And they could at any time transfer the privilege to another bank if they could agree to withdraw their balances from the one and deposit them with the other.

But when paper currency is an essential part of the monetary circulation and one bank possesses a monopoly of note issue, that bank can secure to itself the position of central bank. It can cut short the supply of currency and drive the other banks to borrow directly or indirectly from it.

In the American banking system every member bank is required by law to maintain, in the form of a deposit with the Federal Reserve Bank, a reserve equal to a prescribed proportion of its own deposits. That requirement reinforces the power of the central bank over the commercial banks, in that the latter have to obtain, by borrowing if necessary, not only an adequate supply of currency for their customers, but also the prescribed reserve deposits.

The Macmillan Committee recommended that the English Clearing Banks should agree voluntarily to maintain larger reserve deposits with the Bank of England with a view to "providing the Central Institution with adequate resources wherewith to manage the monetary system, and safely furnish the member institutions with precisely those conveniences for rapidly liquidating earning assets upon which the latter depend when determining the amount of their cash reserves" (Report, p. 158).

It is not very clear why the rediscounting facilities afforded by the central bank should be dependent upon "adequate resources." When the central bank lends, it creates money. It can, if it chooses, prevent the creation of additional money, by selling securities equivalent to the bills rediscounted. But in that case it is not acting for the "convenience" of the member banks, but is putting pressure on them, and compelling them to borrow more.

That, in fact, is the general tendency of the system of prescribed reserve proportions. The reserve deposits, as well as the note issue, must be backed by appropriate assets, either gold or securities bought in the market, or rediscounts. When it is a question of relaxing credit the central bank buys securities, and the extent of the assets it already holds does not affect its power to bring about the desired result. It is when credit has to be restricted that it wants an adequate volume of securities to operate upon. It can sell securities

in the market and raise Bank rate as a deterrent upon rediscounts.

But the note issue, together with the essential clearing balances of the member banks, can hardly fail to give ample scope for these operations, *provided* that the fiduciary margin is not unduly reduced by a redundant reserve of gold.

The Report of the Macmillan Committee contrasts the member banks' deposits of £488,000,000 in the Federal Reserve Banks in 1930 with the clearing banks' deposits of £65,000,000 in the Bank of England. But, for all that, the Bank of England had a greater amount of bills and securities than the Federal Reserve Banks.

The reserve deposits in the Federal Reserve Banks were simply the means of enabling them to absorb additional gold.

It is true that the Bank of England is limited to the use of the securities in the Banking Department (usually amounting to some £70,000,000 or £80,000,000) for the purposes of credit control, unless it obtains the consent of the Treasury to a reduction of the fiduciary issue. But ordinarily this amount of securities is found quite enough for the exercise of control. The balances of the clearing banks play a vital part in the banking system, and can never be reduced below the amounts indispensable for clearing operations. The Bank of England can readily curtail these balances by reducing its holding of securities, and, when it does so, the discount market instantaneously responds to the pressure.

The recommendations of the Macmillan Committee include a reunion of the Issue Department and the Banking Department, which would place the whole of the securities at the unrestricted disposal of the Bank. It is difficult to imagine that further resources could really be required.

It may be freely admitted that, if the competitive banks in any country vary their practice in regard to cash proportions, they may introduce confusion into the regulation of credit. The central bank may reasonably seek to have *some* understanding with them on the subject. But in default of any such understanding, it should not be baffled by their vagaries. It can judge the effect of its measures by the

response of the foreign exchanges, prices, and the state of business.

It is sometimes said that the existence of a very big Government floating debt impairs the central bank's control over credit, because, whenever the competitive banks need cash, all they have to do is to let Treasury bills mature, and to make no application for new bills to replace them. But there is no special virtue in Treasury bills. The banks can raise cash on *any* bills by taking them to the central bank to be rediscounted. Where, as in England, there is an effective discount market, whatever amount of Treasury bills may be necessary can be sold *at a price*. Sometimes, it is true, when bills are tendered for, the total amount tendered for is not sufficient to cover the week's requirements. But that does not mean a breakdown of the market or anything of the kind. It occurs when the market expects a rise in discount rates, and intending applicants prefer to wait. The Bank of England probably lends the Government the amount of the deficiency, but if it wants to avoid relaxing credit in this way, it can do so by selling bills on its own account, and it can make the expected rise in discount rates actual by raising Bank rate. Once there is no further expectation of a rise, the market will work normally again.

It used often to be maintained that a central bank cannot really control the short-term rate of interest except for a few days at a time, but that the rate is essentially determined by underlying economic laws. From that is inferred the doctrine that the central bank ought to *follow* the market instead of leading it.

This doctrine still survives. It supplies a convenient excuse for inaction.

It is quite true that economic conditions determine a "natural" rate of interest. The operations of the central bank depend very much on forcing the short-term rate away from the natural rate, either above or below it. If it leaves the market to itself, casual deviations of the short-term rate from the natural rate will be constantly occurring, and any such deviation may be exaggerated through the instability of credit.

When the central bank elects to "follow" the market, that means that it acquiesces in these deviations. But it cannot acquiesce indefinitely; whenever they become great enough to upset monetary equilibrium (with gold or with whatever standard may be prescribed), the central bank *must* intervene. So following the market merely means delaying action.

In reality it is hardly justifiable to call the fluctuations in the market rate of short-term interest "casual." The central bank has to decide *every day* to what extent it will replace maturing assets. Its decision, whether it increases or reduces the total of its advances, bills and investments, or keeps it unchanged, will always be the principal factor in determining the state of the money market.

The usual practice of the Bank of England is so to manage its securities that the market will just not have to borrow from it. That does not mean that *all* its securities will have been bought in the open market, for it has an important body of customers other than the clearing banks, for whom it renders all the ordinary services of a bank, discounting bills for them and making them advances at the same rates as the competitive banks.

But the open market securities come in as a balancing factor, and are so regulated that the discount houses do not have to borrow from the Bank (apart from regular times of seasonal pressure) unless the Bank wishes to prepare the way for a rise of Bank rate. People see that a rise in Bank rate is preceded by a period of stringency, and a rise in the market rate of discount, and they conclude quite erroneously that the Bank has been following the market.

Since an outflow of gold, which is likely to be the signal for a rise of Bank rate, reduces the Bank's assets, it may not be necessary for the Bank to reduce its securities in order to create the appropriate stringency. In that case the Bank is reverting to Horsley Palmer's procedure of letting the public act upon the Bank.

But sometimes it is the Bank's policy to acquiesce in a gain or loss of gold, and to offset it by a corresponding decrease or increase in its securities. For example, there

may have been a heavy loss of gold, a moment of stringency, a rise of Bank rate, and a sufficient recovery of the foreign exchanges, but the Bank may not think it necessary or desirable so to increase or prolong the pressure as to attract back gold equal to that lost. Something of the kind happened in 1929, as the following comparison shows (in £ millions) :—

	Gold in Issue Dept.	Notes in Banking Dept.	Securities in Banking Dept.
19th June, 1929 .	162.5	62.2	67.8
2nd October, 1929 .	129.1	25.8	103.2

Bank rate was already high, $5\frac{1}{2}$ per cent., in June, and was put up to $6\frac{1}{2}$ on the 26th September, and the increase of securities was not sufficient to make Bank rate ineffective.

When complaints are heard that central banks do not observe "the rules of the game," the intention is, I think, to condemn the practice of offsetting a gain or loss of gold, so that the appropriate ease or stringency is diminished, or even prevented altogether. The accusation is usually directed, not against the Bank of England, but against the Federal Reserve Banks and the Bank of France, which have sterilised much larger quantities of gold, in the sense that they have prevented them from causing a rise of prices.

In the case of the Bank of France the sterilisation of gold (up to October, 1931) was not due to open market dealings, but to their absence. The Bank itself was quite passive in the matter. It was the Government and the Legislature which paid off the Government's debt to the Bank, and so tied the Bank's hands that it could not meet the imperative demands of the community for additional currency except by accumulating gold.

In the case of the Federal Reserve system it was the resort to open market sales of securities that offset the inflow of gold in 1923, and checked the growing inflation and rise of prices. In the case of the outflow of gold in 1927-28,

on the other hand, the purchase of securities came first, as part of a policy of credit relaxation, and the outflow of gold followed. And the sales of securities in 1928 were followed in 1929 by an inflow of gold. The procedure in 1927-29 was thus quite in accordance with the rules of the game.

The Macmillan Committee (sec. 47 of Report) formulated "rules of the game" on somewhat different lines. "It should be an object of policy to secure that the international gold standard should bring with it stability of prices as well as that it should guarantee stability of exchange. Action by individual central banks which, by repercussions on the policy of the others, imperils the stability of the price level should, as far as possible, be avoided."

This is a statement of what the rules ought to be rather than of what they are.

The banking system has a dual function. It provides the means of payment in the forms of bank credit and currency, and it also comes into the capital market as a source of short-term lending. It is with the former function that the art of central banking is primarily concerned. The provision of the means of payment for the community is essentially a public responsibility, upon the proper discharge of which depends the smooth working of the entire economic system.

Credit policy is often discussed and criticised as if the principal question at issue were the due apportionment of short-term lending among different industries and different financial and commercial interests. It is argued, for example, at a time of depression, that industry cannot be tempted into activity by the offer of bank advances, or that, if it could, that would merely mean that industrialists were borrowing more than was desirable or prudent. Or, on the other hand, the objection is that at such a time, if bank advances are expanded, they will not go to industry, but to speculation, or to the Stock Exchange.

Such arguments are based on a misconception. When

banks increase their advances they *create money*, whoever the borrowers may be, and whatever their purpose. People do not borrow money to hold it idle, and therefore the borrowing is always the precursor of a release of cash and an enlargement of the consumers' income (except, of course, when the money borrowed merely repays another loan, and there is no increase in borrowing at all).

It may be freely admitted that it is highly detrimental that banks should lend to unsound borrowers or for undesirable purposes. But if they do, they create money and generate incomes and augment demand no less than if their lending were of impeccable prudence.

It is equally beside the point to object that additional lending may be directed into the Stock Exchange or into speculation instead of into industry. Money that goes into the Stock Exchange or into speculation, whether in commodities or in stocks and shares, is not intercepted and imprisoned. On the contrary, very little idle money is used for these purposes. The money that goes in quickly comes out again. The Stock Exchange is an intermediary distributing money through new flotations to those who engage in capital outlay. In the commodity markets, in so far as speculative purchases do not cancel out against speculative sales, the money paid is paid for the *production* of the commodities dealt in.

Sometimes a fear is expressed that additional advances will merely lead to over-development of the industries that receive them, and a greater accumulation of unsold output. Such apprehensions once more disregard the essential object of the creation of credit, the extension of demand. And they also imply a further misunderstanding of the process of supplying capital to industry.

For bank advances are made for the most part for *working* capital. A revival of productive activity requires additional working capital, and the additional working capital simply goes to those industries which experience an increase of demand. Additional working capital does not extend the *capacity* of an industry or cause "over-development." That is the result of an excess of additional *fixed*

capital. Of that there is no danger till the revival of activity is already an accomplished fact.

It is when a high degree of activity has been attained that the danger of the over-development of particular industries arises. It arises because at that time profits are high, and therefore savings are large. Capital outlay is proceeding at its full normal rate. If credit expansion has gone too far, prices will outstrip wages, activity will grow beyond what can be permanently sustained, and profits, savings and capital outlay will be *above* normal.

Whenever *any* capital outlay takes place, there is a risk of miscalculation as to which is the most favourable opening for it. The risk can be reduced, but cannot be removed by improved organisation or supervision of the investment market. The miscalculation results in some industries being over-developed and others under-developed. To regard that as an objection to capital outlay is simply to reject what is commonly called the "Capitalist System," that is to say, the system of directing investment by private enterprise.

It may be said, perhaps, that at a time of depression the savings available for capital outlay will be supplemented by bank advances, and, that if miscalculation results in the bank advances being lost, the consequent embarrassment and discredit will be more serious than the mere loss of savings by a number of individuals.

But bank advances for outlay on fixed capital are not a characteristic of times of depression. They are a sign of optimism in regard to industrial prospects, whether they take the form of advances for the purchase of stocks and shares or advances to industrialists for capital extensions and improvements, in anticipation of profits. Moreover, the failures that arise out of such advances are largely the result of the circumstance that the advances originate at a time of activity when prices are high. Some miscalculations of the outcome of capital enterprises are bound to occur in any conditions, but far the most fruitful cause of miscalculation is the instability of the currency. Whenever there is a considerable fall of prices, loans originally

sound may become unsound, and ventures originally prudent may end in loss.

The activity of the production of capital goods depends mainly on the volume of savings *out of income* available for capital outlay. Savings out of income may be supplemented by bank advances or by sums drawn from idle deposits, or they may be encroached on through the accumulation of idle deposits and the repayment of advances. In the one case there is a release of cash and in the other an absorption of cash.

As we have seen, the release or absorption of cash for these purposes (as well as for any others) may be stimulated by a relaxation or restriction of credit. But usually the most powerful motive for the release of cash for capital outlay will be an *existing* state of activity, and the most powerful motive for the absorption of cash will be an *existing* state of depression. The release of cash to supplement the current flow of savings available for capital outlay is of importance chiefly as maintaining and intensifying a spell of good trade after it has begun, and the very prevalent idea that at a time of depression revival can best be *started* by getting people to invest idle balances is a fallacy.

The effects of low rates of interest on time deposits in that direction are limited. The only effective way to induce people to invest more freely is to offer them securities on more attractive terms. And that is precisely what the market does without any prompting. That is not to deny that special circumstances *may* arise in which the market fails to perform its proper function, and in which there is such profound distrust of all private ventures that only a Government issue can mobilise the available savings. But considering how slow capital enterprises are in getting under way (and not least those organised by Governments) it may well be that the best way out of such an impasse is to be found through what I regard as the normal machinery of revival, the encouragement of bank advances to commercial borrowers for the purchase of commodities.

The reason why prominence is given to capital outlay among proposals for remedying a trade depression is that

the effect of trade depression on the production of capital goods is much more marked than on the production of consumption goods. That is due to the disproportionate effect of depression on profits and therefore on savings.

The way to revive capital outlay is to revive profits. That must be done by a release of cash, but the efficacy of the release of cash in reviving profits does not depend on the *immediate* purpose for which cash is released.

This applies likewise to a revival of international investment. The suspension of international investment at a time of depression is a result of the drying up of profits in the lending countries. It greatly intensifies the depression in the borrowing countries. The conclusion is hastily drawn that something ought to be done to revive international investment by way of a release of cash from the lending countries to the borrowing countries. In reality *anything* that revives profits in the lending countries will revive saving and, along with saving, external investment. A release of cash to the borrowing countries which fails of this effect can give no more than a very fleeting relief.

Much stress has been laid in recent years upon the great amount of money seeking temporary investment internationally, and the consequent difficulties placed in the way of credit regulation. And it is suggested that the right remedy is to be found through inducing the owners of this money so far as possible to place it in permanent investments. But it cannot be assumed that the money is necessarily available for permanent investment at all. Very formidable totals of the foreign balances temporarily placed in New York or London have been computed. But these totals require to be analysed in order to be understood.

A part is by no means new. The United States Department of Commerce, in commenting upon the foreign money deposited in American banks says: "Many of the deposits are required by individual long-term borrowers in preparing to make payments to American holders of their securities on account of dividends, sinking funds or bond

redemptions. Other deposits are required by thousands of banks abroad each of which must stand ready to sell dollar exchange to its customers." Balances of this kind in the United States are enormously greater than they used to be. But they must long have been very large in London.

Dealings in foreign exchange are carried on partly by means of branch banks and partly by means of correspondent banks. In the American statistics of foreign short-term money a branch bank is treated as if it were an independent bank acting as correspondent of its own head office.¹ Correspondent banks keep balances on current account with one another. These are the working balances of the dealers in foreign exchange.

Dealings in foreign exchange are apt to involve large single transactions, and the balances must be great enough to absorb large daily fluctuations. As communications improve, and cheques and cable transfers tend to displace bills as the means of remittance, the strain on balances is increased.

It is always the balances held in the great international centres that are most actively drawn on. Foreign exchange business must be *centralised*. The business in any less important centre gives rise to credit and debit balances in various currencies, which require to be "cleared" against the debit and credit balances arising elsewhere. A bank in a less important centre will regularly settle such balances through its correspondent in London or New York.

Thus there must in any case be a very great concentration of foreign-owned balances in these centres. Such balances play the part in some degree of monetary reserves. For example, the Australian monetary system has long been based on the sterling holdings of the Australian banks. When those holdings are deficient, the Australian banks restrict credit in Australia; when their sterling holdings are redundant, they relax credit. The Canadian credit system is similarly based on balances in New York. And all over the world an approximation to the same system may be

¹ A branch bank in a foreign country will have its deposit liabilities in the currency of that country, and if its assets are not in the same currency an international obligation results.

found. Intermediate centres may still have some international business arising from neighbouring countries or from dependencies, but all are more or less linked on to London or New York, and still predominantly to London.

These correspondent balances are normally very stable. Individual balances fluctuate rapidly and widely, but the aggregate in London or the aggregate in New York does not. But big fluctuations may be caused whenever there is extensive speculation in foreign exchange. It is one of the virtues of the gold standard (or of any alternative monetary system which maintains fixed international parities) that it prevents such speculation.

One reason why the suspension of the gold standard in Great Britain in September, 1931, had such far-reaching effects on the foreign exchange markets of the world was that it interfered profoundly with the correspondent bank system. As soon as the suspension of the gold standard became imminent there was a sudden flight of balances from London for fear of sustaining an exchange loss.

The gold standard is a safeguard against currency speculation only so long as it is working normally and commands confidence. The moment it is mistrusted, it provokes movements of money on the largest scale. When a currency is inconvertible, the market promptly meets a speculative movement by an adjustment of rates of exchange. If distrust of the currency causes a big speculation for a fall, the banks and other dealers in foreign exchange are not willing to buy all that the speculators choose to sell; they reduce the quotation of the currency unit to such a level as to counteract the speculation. But with a gold standard the quotation cannot be reduced below the gold point. The central bank, being compelled to buy the currency at its gold parity, comes into the market as a bull speculator on a scale limited only by the extent of its gold resources. Speculators for a fall take full advantage of the opportunity, and the result is that the distrust of the currency takes effect wholly in a withdrawal of money instead of in a reduction of quotations. The pre-occupation of the world's money markets with international movements of money in the years since

the war has in reality been mainly due to the precariousness of the gold standard in some of the countries concerned.

The growth of internationally held balances is by no means due exclusively to the extension and elaboration of foreign exchange transactions. There has also been a very great increase in central banks' holdings of foreign exchange.

At the end of 1928 the total foreign exchange reserves of central banks and currency authorities were approximately £600,000,000, of which far the greatest part was held in London and New York.

Central banks' holdings of foreign exchange ought not to be a source of trouble in credit regulation at all. Indeed, if judiciously used, they are just the reverse. They enable the central banks to counteract the inconvenient consequences of movements of the privately held balances, without resorting to large movements of gold. It is remarkable that in the period preceding the British suspension of the gold standard there was no tendency on the part of central banks to liquidate their holdings of foreign exchange. They were willing to risk, and did, in fact, sustain losses through the depreciation of their sterling holdings. It was only afterwards that there was an extensive liquidation, which applied to dollar holdings as well as sterling.

One other source of abnormal international balances requires mention. That is the intense demand for additional working capital in Germany and Eastern Europe after the monetary collapse of 1919-23. The very high rates of short-term interest that prevailed offered a profitable investment to foreign banks, and, as we saw above, involved Germany in a gigantic short-term indebtedness, the existence of which was the immediate cause of the crisis of 1931. The ultimate liquidation of that indebtedness must inevitably present a very baffling financial problem at some time in the future. Perhaps it would have been difficult even if the depression and crisis had been avoided altogether, though so long as the debtors remained prosperous and solvent, the debts might have been left outstanding for a long time and dealt with by funding or otherwise very gradually.

There is no reason why a position like the big German

short-term indebtedness of 1931 should grow up again. It was the result of the last extremities of inflation. In the case of countries like France, which suffered severely from inflation, but avoided an utter collapse, there was no such desperate scarcity of working capital. On the contrary, France was believed to be a short-term *creditor* at the end of 1926, and from 1927 onwards was conspicuous for low rates of short-term interest.

On the whole, there would seem to be no reason to anticipate that the art of central banking will in the future encounter any great difficulties from the growth of internationally held balances. And I think the disturbances so caused in the recent past have been over-estimated. Central banks have, it is true, been desperately afraid of the withdrawal of foreign money (though very illogically they have usually been quite ready to welcome an inflow, and actually desirous of encouraging it). But (apart from the very exceptional German case) the statistical evidence goes to show that the movements have not been very great, and have sometimes been the direct contrary of what was supposed at the time.

In 1928, at the very height of the Wall Street speculation, the deposits and other short-term debts due by American banks to foreigners actually declined by \$170,000,000, though call money averaged 6 per cent. for the year, and in December, 1928, averaged 8.60 per cent. There was, it is true, an increase of \$212,000,000 in 1929, and the increase for the part of the year up to the crisis of October was greater (the loss of gold in November and December amounting to \$100,000,000, no doubt, mainly represented a withdrawal of foreign money), but even so, the amount of money involved was far less than was believed at the time.

The fact is that *any* adverse movement of the foreign exchanges presents itself to the financial community in the guise of a withdrawal of balances. That is the result of the organisation of the market, which adjusts rates of exchange and moves gold only *after* disequilibrium has appeared in the accumulation or depletion of balances of foreign currencies in the hands of the banks and other

dealers in foreign exchange. Foreign exchange movements which are really due to less obvious causes are thus attributed glibly to a movement of balances.

Monetary conditions have been abnormal ever since the end of the war. After the chaos of the inflation period, there came a lucid interval of a few years before the crisis and depression which started in 1929. But even the lucid interval was not very lucid. The return of Great Britain to the gold standard was made under conditions of disequilibrium, in that British industry was in a state of depression while American industry was in a state of high activity. British industry urgently needed a continuance of the credit relaxation which had been in operation up to the middle of 1924. Instead, it had to face a renewed credit restriction, which was intended to bridge the remaining gap between the pound and gold parity. The gap once bridged, the pound was tied by law to gold, and escape by credit expansion from the depression was barred. Former practice would have required cheap money at a time of trade depression. But an unfavourable exchange position was judged to require dear money. The revival of industry in fact was impossible without an enlargement of the consumers' income and outlay, and any such enlargement would be bound to attract an excess of imports and cause a loss of gold. Industry was like an army caught in a narrow space in which it had not room to deploy.

With the year 1929 came the return of monetary instability, and there followed the violent appreciation of gold with all its disastrous consequences. To British industry it was merely the intensification of a pre-existing state of depression. In the competitive compression of the consumers' income and outlay in all gold standard countries, it at last became impossible for Great Britain to keep pace. The latent disparity of monetary conditions that had existed ever since 1925 was suddenly made actual in the collapse of the gold standard.

We must not measure the difficulties of the art of central

banking by the experiences of the past twelve years. The difficulties have been partly created and partly aggravated by the mistakes of the central banks themselves. It is a consequence of the inherent instability of credit that, if matters are allowed to drift, any departure from monetary equilibrium may become indefinitely widened. Prompt action on a very moderate scale may be effective, whereas delay will make heroic measures necessary. As the Macmillan Committee put it, "The fact that a motor-car is not well adapted for getting itself out of a ditch, once it has fallen in, does not prove that it is beyond the powers of good driving to keep it in the middle of the road" (Report, sec. 212).

The American experiment in stabilisation from 1922 to 1928 showed that early treatment could check a tendency either to inflation or to depression in a few months, before any serious damage had been done. And even that practice can undoubtedly be improved upon. The change from credit contraction to credit expansion in 1924 might well have been made several months earlier, and the depression of 1924 almost entirely avoided. And in 1925-28 the Federal Reserve Banks had to deal with an international gold standard without any understanding of their policy from the rest of the world.

The American experiment was a great advance upon the practice of the nineteenth century. In the nineteenth century and up to 1914 the trade cycle was accepted in a spirit of fatalism. Economists, unwilling to admit that it could be merely a monetary disease, surrounded it with an atmosphere of mystery.

Since credit regulation works through the enlargement and compression of the consumers' income, it is bound to cause activity in the one case and depression in the other. When the enlargement of the consumers' income throughout the gold-using world was allowed to proceed till currency expansion caused a scarcity of gold, then there necessarily followed a protracted period of compression of the consumers' income till the requisite currency contraction had been brought about. The expansion or contraction of the

currency is so tardy a symptom that action on these lines was bound to come not merely months but years too late.

Among all economic phenomena the "state of trade" was that which affected the daily lives of the people most nearly, and attracted most attention. A Finance Minister introducing a budget or a banker addressing his shareholders would dwell upon the state of prosperity or depression in which trade and industry happened to be. Every one took for granted that there should be "progress," but economic progress was intermittent; it was subject to periodical set-backs. And depression was a matter of concern not only as interrupting progress, but also as being associated with unemployment.

Unemployment is no new problem. Economists were long inclined to shirk it, and to treat it as no more than the necessary transitional condition arising from the displacement of labour from declining industries into rising industries. The epidemics of unemployment characteristic of trade depressions would not fit into this explanation.

A systematic study of the art of central banking reveals unmistakably the manner in which credit regulation causes unemployment. Compression of the consumers' income *must* do so unless it is accompanied (as it never is) by a sufficiently prompt reduction of wages.

In the trade cycle of pre-war times every epidemic of unemployment started with a violent credit contraction, usually involving a financial crisis in some part of the world, and continued till measures of credit expansion had become effective. Since 1918 the cyclical character of the epidemics has been very much obscured. That is because the gradual absorption of gold through an expansion of the monetary circulation and the gradual release of gold through the subsequent contraction have been interfered with. In the paper money period up to 1924, the currency systems of different countries were independent of one another, and monetary expansions and contractions brought alternations of activity and depression, "catastrophe booms" and "stabilisation crises," at short and irregular intervals in each country separately.

The return to gold tended to restore the international character of the alternations of activity and depression, but discontinuities of monetary policy prevented the reinstatement of the trade cycle of the old slow and moderate type.

The common factor of pre-war and post-war experience is the intimate association of the "state of trade" with the enlargements and compressions of the consumers' income and outlay effected by the central banks. If this fundamental causal sequence were generally understood, the public would hardly acquiesce in the central banks proceeding, from their position of complacent detachment, to generate depression, unemployment, bankruptcy, budget deficits and defaults, with all the resulting political and social convulsions, while Government after Government is broken because it can neither stem the flood of ruin, nor even provide tolerable palliatives to alleviate the consequences.

CHAPTER V.

MONEY AND INDEX-NUMBERS.

THE VALUE OF THE UNIT.

IN monetary theory and in monetary policy alike one of the fundamental ideas is that of the value of money. In monetary theory it is, in a way, *the* fundamental idea. Monetary theory might even be described as nothing more than the theory of how the value of money is determined.

As to the position held by the value of money in monetary policy there is some difference of opinion. But even those who think that monetary policy should not be explicitly guided by any consideration of stabilising value would recognise that the gold standard itself is to be recommended as a means of keeping the value of money within reasonable limits.

But if we ask what is *meant* by the value of money, we are brought up against certain theoretical difficulties which cannot be certainly or satisfactorily met and which are constantly being felt in the course both of monetary theory and of monetary policy.

Value, in the sense in which it is here used, means value in exchange, and the exchange must be exchange in a *market*. But for the existence of a market, similar exchanges would not be at the same ratio, and the relation indicated by value in exchange would not be determinate at all. A market is limited to a particular time and place. At a different place, or at the same place at a different time, the things dealt in may be different, and, in so far as they are similar, their relative values and relative importance may be different.

The monetary unit is no more than a creature of the

market. It is the unit in which prices are quoted and bargains are struck. The unit is dependent for its very identity upon the market which employs it.

The market assigns a single, determinate price to each thing dealt in; and thereby it establishes a *value* of the monetary unit in terms of each of the things dealt in. It establishes a multitude of alternative values—values in terms of the several individual things and in terms of all possible collections of them. There is no single value of the unit in terms of things in general, which is theoretically *the* value of the unit.

In what sense and for what purpose, then, does monetary theory require an unequivocal value to be assigned to the unit?

Monetary theory is constantly concerned with tendencies which affect *all* prices equally, or at any rate impartially, at the same time and in the same direction. In order to measure such tendencies, it has to disentangle their effects from the changes in individual prices which are traceable to disturbances of supply and demand, or, more generally, to non-monetary causes.

THE INDEX IN THE EQUATION OF EXCHANGE.

The quantity theory is a device for accomplishing this end. Professor Irving Fisher's Equation of Exchange analyses the total of transactions in a period of time into two factors, the volume of transactions and the price level. The volume of transactions involves the idea of a total of wealth. In order that a number of heterogeneous items of wealth may be aggregated into a sum, they must be expressed in terms of a common unit. They must, in fact, be priced, and they must be priced in the same market. The aggregate so arrived at is a number of monetary units.

With a given price list we can compare any two aggregates of wealth, so long as neither of them contains any items not included in the list. But all such comparisons are relative to the price list and therefore to the market (actual or hypothetical) from which the price list is derived.

The same method which compares two aggregates of wealth with reference to a given price list enables us to compare two price lists with reference to a given aggregate of wealth. Each price list applied to the items of the aggregate gives its own appropriate sum-total of monetary units, the ratio between these totals supplying an index of the difference of price level.

I do not propose to travel once again over the well-worn path of controversy as to the ideal methods of averaging and weighting index-numbers. But I would point out that much of that controversy is in reality irrelevant to the selection of an index-number for Professor Fisher's Equation of Exchange. The equation of exchange itself determines its own type of index-number. Since the equation of exchange proceeds from a comparison of two aggregates of wealth, it must employ the type of index-number which arises from such a comparison, that is to say, the weighted arithmetic mean. The ambiguities inherent in that index, owing to the differences in weighting appropriate to the different periods to be compared, are inherent in the equation of exchange itself.

To this it might be answered that the equation of exchange does not absolutely require the idea of the price level to be derived from the idea of the volume of transactions. We are quite free, if we choose, to arrive at an independent estimate of the price level with whatever methods of weighting and averaging seem best, and then to measure the volume of transactions by dividing the value of transactions by our price index.

I will illustrate the point by a numerical example. Let the commodities dealt in be three in number, equally weighted at the base period, and let their prices be represented at another period by 200, 400 and 800. If the quantities dealt in are the same as at the base period, the total money value of transactions will be 1400 and the price index will be $466\frac{2}{3}$. If we prefer to take the geometric mean, the index will be 400, and we can then arrive at our measure of the volume of transactions by dividing the value of transactions, 1400, by 400. The result is $3\frac{1}{2}$

instead of 3. That is to say, although the physical quantity of each class of goods dealt in remains absolutely unchanged, the "quantity" for the purposes of the equation of exchange has increased by one-sixth.

If the geometric mean were *the* perfect index-number, this paradoxical result could be defended. It might be argued that the same quantity of goods had become one-sixth more precious as determined by some independent standard, such as marginal utility. But it is not clear that any such independent standard is available, and, even if it is, there is no reason to suppose that the geometric mean has any more connection with it than the arithmetic.

THE INDEX-NUMBER AS A SAMPLE.

So long as we are concerned with the price level as something correlative to an aggregate of wealth, we are tied to the arithmetic mean. But there is another standpoint from which we may view the price level, and from which we may assume a wider degree of freedom. Monetary theory is concerned with causes which tend to raise or lower the price level, because they tend to raise or lower all prices to the same proportional extent. If there were no other causes either disturbing prices or interfering with the free action of the general tendency, then any one selection of prices would reveal the tendency as perfectly as any other.

Under the conditions of reality disturbing and interfering causes exist, but every price is nevertheless affected by the underlying monetary movement. A *sample* of prices ought therefore to disclose the magnitude and direction of that movement, provided it is a fair sample. All the index-numbers in practical use are samples, and the technique of index-numbers ought accordingly to be approached from that point of view.

If the non-monetary causes at work were absolutely unknown, we should have no alternative but to take a random sample, and to make it as comprehensive as possible. That is the course of statistical puritanism, which

refuses to manipulate the available data, and sternly closes every path by which preconceived ideas can gain access to its operations.

If the non-monetary causes were very many and all small relatively to the monetary, a random sample would still be appropriate. (Any predominating bias among the non-monetary causes would itself be classified as a cause not relatively small.)

Unfortunately these conditions are not fulfilled. A price index-number is liable to be disturbed by non-monetary causes of which the effects are considerable in comparison with those of the monetary causes.

Each of the non-monetary causes affects only one or a few products, but if the products affected are weighted to the extent of 2 or 3 per cent. of the total, and the causes are great enough to double or halve their prices, the result may be to modify greatly or to mask altogether a monetary movement of considerable practical importance. Special caution is required in dealing with certain groups which are usually heavily weighted, particularly (1) cereals, (2) cotton and cotton goods, and (3) coal, iron and steel and engineering products.

ELIMINATION OF NON-MONETARY CAUSES.

If we had the means of measuring the effects of the non-monetary causes directly, we could allow for them, and the monetary movement would stand revealed when once the non-monetary movements had been eliminated. But any such measurement is quite impossible. We can say that short crops will raise the prices of cotton or cereals, or that a coal strike will raise the prices of coal, iron and steel, but we cannot say how great the rise of price will be in each case.

We have therefore to fall back on a more rough-and-ready method. We can pick out a limited number of commodities of which we know the prices to have been disproportionately affected by non-monetary causes, and exclude them from the comparison. I do not mean to

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suggest that a series of index-numbers should be constructed on that principle. It is in the practical application of the series to reveal a monetary movement that expurgation of the kind described becomes necessary. The commodities to be excluded should be chosen not, primarily, because their prices have behaved differently from the predominant trend, but because their prices are known to have been seriously affected by non-monetary causes. Great inequality of price movements may arise from the action of monetary causes themselves.

Expurgation of the index-number will only yield a satisfactory result if the commodities left in are sufficiently numerous and representative to afford a fair sample. They need not necessarily be commodities of the first importance, provided they are typical in their response to the market.

Non-monetary causes may arise on the side either of demand or of supply. But in general those arising from changes of demand are less likely to require any correction of the index-number. A change in the preferences of the consumer will increase the demand for some products and decrease the demand for others. The rise in some prices will be accompanied by a fall in others. It is true that we cannot assume rise and fall to balance one another exactly. In fact, increasing returns may lower the price of a thing that comes into more extended favour. But that is a change in the conditions of *supply*, and has to be allowed for as such.

And in practice it is rare to be able to identify a considerable price movement as due to a change in demand.

AN INDEX OF THE FACTORS OF PRODUCTION.

The elimination of non-monetary causes is justified as a *practical* device. We seek to measure a tendency by sampling a number of quantities in each of which the tendency is at work, and we exclude from the sample those quantities in which the effect of the tendency is known to have been distorted or obliterated by disturbing causes.

Nevertheless, the process has its theoretical side. What

is it we are eliminating? What kind of correction do we set out to apply to our index-number, and by what standard is the result to be judged more correct after the process than before?

When we class a change of price arising from the conditions of supply as non-monetary, we mean that the change of price is due to a change of *cost*.

This is true of the varying yield of crops and of increasing or diminishing returns, as well as of changes in the processes of manufacture. A short crop means a smaller volume of production for a given cost of effort and of the factors of production. The rise of price may, it is true, be greater (or less) than in proportion to the consequent increase of cost. But, if so, that means that the effect on price is modified by the conditions of demand. If the crop is half the normal and the price is quadrupled, then a great part of the increase in price represents demand diverted from other products. If the price increases less than in proportion to the shortage, the difference represents demand diverted to other products.

It is only in the ideal case, where elasticity of demand is equal to unity, that the demand for other products remains unaffected, and that therefore the method of correcting the index-number by elimination exactly fulfils its purpose. That purpose may be described as the elimination of changes of price that are due to changes of real cost. If cost be defined comprehensively, to include the payments made for all the factors of production and exchange, and therefore to include profit, then cost is equal to price, and every variation in price is due *either* to a variation of real cost, *or* to a variation in the money value of the factors of production and exchange.

If we start with a given change in a price index, we may imagine the change in each separate price to be analysed into the portion (if any) due to a change in real cost, and the residue. We may then suppose the residual portions to be collected into an average or index-number, and this index-number will give us what we are aiming at when we try to eliminate the non-monetary disturbances.

Here is a new aspect of the matter, for the resultant index-number is nothing more nor less than a *price index of the factors of production*.

Such an index could hardly be calculated directly. There is a market in wages, and there can be an index-number of wages. But it would be utterly impossible to construct index-numbers of the other factors of production. The market does not quote a price for each kind of contribution from capital, land, management or organisation to the process of production. Interest, depreciation, rent and profit are determined by complex reactions among a number of forces. When the system is in perfect equilibrium, the payments for all these factors conform to definite laws, and theory shows that under those conditions cost may be expressed in terms of cost of effort. The contributions of land and capital to production may be expressed in terms of effort saved. The same is true of cost of management so far as paid for as a separate item. Profit itself is a form of personal remuneration, regulated ultimately, though not very directly, by the labour market.¹ Thus under equilibrium conditions an index of the factors of production would be substantially equivalent to an index of wages. When equilibrium is disturbed, wages may get seriously out of proportion, and what wages gain or lose is lost or gained by profit, which is the residuary item in the total of costs. For the time being an index of wages ceases to be an adequate index of costs.

CONSUMERS' INCOME AND OUTLAY AND CHANGES OF PRODUCTIVITY.

The relation of the value of the currency unit to the cost of effort is best seen if we view the productive efforts of the community as a whole.

Producers and dealers employ the workpeople and the material resources of the community to produce a supply of goods and services. All incomes are derived from production, taken in its widest sense to include transport

¹ See my *Economic Problem*, chap. v.

and dealing. Every income is either a payment for services rendered by the recipient (in person or property), or is charged upon other incomes. The unproductive incomes which are not paid for any service rendered can be regarded as a diversion of a part of the productive incomes.

The total of all incomes reckoned in monetary units, the consumers' income, is therefore the sum of the payments made for all the services rendered by the factors of production. The consumers' income when spent, that is to say, the consumers' outlay, constitutes the demand for all products. Consumers' income and consumers' outlay must be equal, except in so far as there occurs a release or absorption of cash.

Suppose now a change in productivity. The application of effort and the factors of production remaining the same, the physical total of the output is increased or diminished. If the index of the factors of production is to be kept invariable, then the consumers' income and outlay will be unchanged. Demand being unchanged, the price level will fall or rise just in proportion as output is increased or diminished. In fact the elasticity of demand for all products taken together is unity.

It will be observed that here we are employing the idea of an aggregate of wealth, and our method of measuring the price level must be correlative to that idea. For any particular product the changes in output, in cost, and in price will be ascertainable facts. For the aggregate of all products these quantities depend on methods of averaging and weighting.

Next suppose that, productivity being unchanged, the consumers' income changes. There will be a transitional interval during which cash balances and stocks of commodities will be subject to variations, and there will be no longer an equality either of consumers' income and consumers' outlay or of production and consumption. But the interval of disturbance once over, these equalities will be re-established. If production is unchanged, the price level will then have risen or fallen in exact proportion to the consumers' income.

It is a change of this character in the price level that is to be regarded as a change in the value of the monetary unit from the standpoint we are now adopting. More generally we may say that any change in the consumers' income which is not proportional to a change in the amount of the factors of production employed involves a change in the value of the monetary unit. The value of the unit is thus taken to mean its value in terms of the factors of production. Here is a simple formula which eliminates those non-monetary causes that arise on the side of supply. We cannot apply it directly as a test of variations in the value of the unit, because we cannot arrive directly at an index-number of the factors of production. But when we correct an index-number of commodity prices by eliminating price changes due to changes in the conditions of supply, we may regard this as an indirect method of applying the test.

A LABOUR UNIT.

Our formula does not altogether avoid the problem of forming an index-number from a weighted average; for while it leaves the aggregate of products on one side, as a factor not entering into the calculation of the value of the unit, it does implicitly involve the idea of the aggregate of factors of production. Even though we do not directly compute this aggregate, the significance of the formula is essentially dependent upon it. A change in the consumers' income involves a change in the value of the monetary unit in so far as it is not accounted for by a change in the factors of production.

In order that they may be aggregated, the factors of production must be expressed in terms of a common unit—in fact they must be priced.

In a certain sense the factors of production are more intimately related together than are commodities. Commodities are only susceptible of comparison in that they all are possible objects of expenditure and are dealt in in the market. The factors of production are likewise objects of expenditure and are dealt in in the market, but *also* they are measurable in terms of effort or man-power.

The material aids to production, land and capital, and the services of organisation and management, are valued as means of saving or reinforcing labour. All the factors of production are measurable in terms of productive power, and productive power may be estimated in terms of labour.

That is a broad generalisation for which exact truth cannot be claimed. "Labour" is not a perfectly homogeneous thing. An hour's work by an undistinguished able-bodied man may supply a standard of measurement, but as soon as we proceed to compare this with any other kind of hour's work, we find that the comparison has to be made through market value, and market value is determined by the force of demand operating upon various degrees of scarcity, whether natural or artificial. In principle this raises afresh the same problems as an index-number of commodity prices. But we can form the conception of an aggregate of effort or of man-power with suitable corrections for variations of quality among the different kinds of effort. I do not wish to press this idea further than it may legitimately be carried. We cannot ultimately escape from the labour market as the test of the quality of different kinds of effort.

But the hour's work of the undistinguished able-bodied man *does* give us a link between every labour market and every other. And when we are making comparisons of the same community over periods within which the factors of production have undergone no very sweeping change, the condition that the consumers' income varies in proportion to the amount of the factors of production employed has a very definite meaning.

This seems to offer a simple definition of the value of the monetary unit. Its value is its purchasing power in terms of human effort.

Nevertheless it is not quite so simple as it looks. We cannot assume that the shares of the factors of production in the proceeds of their activity are in their due economic proportions. If a monetary disturbance occurs, and the consumers' income changes relatively to the factors of production employed, the primary effect is likely to be

a change in profits, without any proportional change (and perhaps without any change at all) in wages. Therefore we cannot say that the value of the monetary unit is its purchasing power in the labour market.

Unemployment is another complication. If the consumers' income is curtailed by a credit contraction or any other cause, there results not only a reduction of profits but a decline in productive activity. The factors of production will be only partially employed. Clearly for the purposes of our formula it is with the factors of production actually employed that the consumers' income must be compared. The consumers' income is composed of the payments for the services rendered by the factors of production. In so far as no services are rendered there are no payments. In the case of labour the distinction is plain enough. But in the case of land, capital, or management being under-employed, it may not be easy to measure the extent of the services rendered. There is no need here to enlarge upon the difficulties that arise.

THE VALUE OF THE UNIT FOR PURPOSES OF MONETARY POLICY.

Having thus arrived at a definition of the value of the monetary unit, I do not want to put it forward as the right theoretical definition to the exclusion of all others. It is quite sufficient to claim for it that the conception I have defined *does* arise in the course of monetary theory, and requires accordingly to be considered.

But when we turn from theory to monetary policy, different criteria have to be applied. As soon as stability of the value of the unit is set up as an aim of monetary policy, the definition of the value of the unit becomes a matter of practical consequence. In order to carry out the policy, we must be clear *what* it is that we want to stabilise; and the definition to be selected must be conditioned by the aim of the policy. The scope and character of the policy may be modified by modifying the definition. We want to select that definition among all

those possible which will make the policy of stabilisation most beneficial, just as a definition in an Act of Parliament is framed so as to make the application of the Act that which is judged most desirable.

The aims of the policy of stabilisation are best described in a negative form, in terms of the evils it seeks to avoid. Critics frequently attack the policy on the ground that no manipulation of money—a mere medium of exchange—can produce additional wealth; that no conjuring trick can produce the substance out of the shadow. That is a misunderstanding. The very same school of thought which makes this criticism is ready enough to expatiate on the dire consequences of the mismanagement of money. Monetary stabilisation is not to be regarded as a miraculous *cornucopia* multiplying production without effort, but as a method of avoiding the various disorders, the impoverishment and injustice, which unregulated variations in the value of the unit may cause.

Among these disorders we may concentrate upon three principal groups. First, injustice between debtor and creditor; secondly, disturbance of the relations between values, particularly between wages, prices and profits; and thirdly, the effect of monetary expansions and contractions upon productive activity.

INJUSTICE BETWEEN DEBTOR AND CREDITOR.

The question of injustice between debtor and creditor arises mainly in the case of the rentier, the long-term investor who contracts to receive sums fixed in monetary units in the form of rent or interest and sometimes of the ultimate repayment of capital. In the case of short-term debts there is hardly room for any seriously inequitable change of value to occur, except at a time of extreme monetary instability. Where the instability is kept within moderate limits, its effects upon short-term indebtedness are best dealt with under our other two headings.

Professor Irving Fisher, who has long been one of the most distinguished advocates of monetary stabilisation,

has always laid special stress on this requirement of justice to the fixed-interest investor. It is easy to show that a seriously unstable unit inflicts injustice. There is no doubt at all that an income fixed in pounds or dollars acquired by an investor in 1896 and retained by him up to 1920 had been enormously depreciated (by much more than half) owing to the rise in the price level. There is also no doubt that a similar fixed income acquired in 1920 is being paid in pounds or dollars which represent much more wealth than at the time of the investment.

These are wide movements of prices, about the general tendency and order of magnitude of which there is little dispute. It is when less sensational movements are involved that more precise measurement becomes necessary, and that a choice has to be made between our formula and its rivals.

In what sense must we understand the "value" of the unit, if stabilisation of that value is to secure justice to the fixed-interest investor? The question relates, of course, to relatively long periods, and we can disregard the short-period disturbances of the relation between profits and wages.

If real costs remain unchanged, so that a given amount of the factors of production yields the same output, our formula will give the same result as a commodity price index. In order to distinguish between the two, we must suppose a change in real costs or in the productivity of effort.

Take first the effect of diminishing returns. Output is diminished in relation to effort. Suppose that the factors of production employed have increased by 20 per cent., but that the output measured in physical units has increased by only 10 per cent. The question is whether, in order to secure stability, the consumers' income ought to increase by 20 per cent. or by 10 per cent.

Consider the position of the recipient of a fixed income. A fixed income has usually been provided to take the place of an actively earned income. It may be destined for a business man after retirement, or for his widow, or perhaps

for some one still active, whose ambitions lie in the direction of art or politics or some other non-remunerative occupation. Whatever the circumstances may be, the calculations made at the time when the money was saved and invested will be based upon a comparison of the income to be expected with other incomes. The man who saves for the sake of his widow will aim at securing her such an income that she can associate without embarrassment with his own social equals. The standard will be set by their incomes, from business or from professions. If their incomes, reckoned in money, change materially, his calculations will, to that extent, prove wrong. If the currency is so regulated that the commodity price level is unchanged, the earned incomes will be reduced in the same proportion as productivity, i.e. by one-twelfth. A fixed income will then retain its command over commodities unchanged, but will hold an improved position in comparison with other incomes. The intentions of the man who saved to provide the fixed income would be adequately carried out if the currency were so regulated as to maintain incomes unchanged and to allow a rise of commodity prices by one-eleventh. There is nothing in the idea of a fixed income to require that the possessor should be safeguarded against the effects of a scarcity of natural products from which his neighbours with earned incomes suffer.

Turn next to the case of diminishing costs. The agents of production employed increase by 20 per cent., and output increases by 50 per cent. If the commodity price level is kept fixed, the consumers' income rises by 50 per cent., and the remuneration of a given productive effort rises by one-fourth. The fixed income retains its purchasing power over commodities, but suffers in relativity with the neighbours' earned incomes.

It may be said that the recipient of the fixed income has nothing to complain of, in that he has an undiminished command over goods. But that is no compensation for the loss in relative position. And if we consider what it means in terms of real income, we find that he has to accept

the cheap goods made by improved methods or derived from new sources of production as the equivalent of the more highly prized goods previously available. There will not necessarily be any difference of quality. The new cheap machine-made articles may be just as good as those formerly made by hand. But even so they are not really equivalent in the eyes of the consumer.

If the commodity price level is kept fixed, then all those things of which the real cost has not fallen must rise in price. The recipient of a fixed income can only maintain his consumption of these things undiminished if he forgoes the advantage of increasing his consumption of those which have been cheapened.

I do not want to lay any great stress on these arguments founded on justice to the rentier. It is enough for my purpose to show that on the whole the balance of argument is on the side of stabilising incomes or the remuneration of effort rather than commodity prices.

WAGES, PRICES AND PROFITS.

I turn next to the disturbing effects of monetary instability upon the mutual relations of wages, prices and profits. Here one of the governing conditions is that prices are much more easily adjusted than wages. Suppose that any economic change occurs which requires a change in the relation of wages to the price level. The policy of currency stabilisation might be interpreted to mean either the stabilisation of the wage level or the stabilisation of the price level, but it cannot mean both, for they are not consistent with one another. Which is to be preferred?

Suppose that real costs have risen or productivity has declined. To keep the price level constant, the consumers' income and the consumers' outlay must be reduced in proportion to output. The first impact of the reduction will be felt in a shrinkage of profits and a curtailment of production. There will follow an interval, which may be protracted, during which wages have to be brought down to the new equilibrium level.

On the other hand, if the price level is allowed to rise in proportion to the decline in output, that means that consumers' income and consumers' outlay remain unchanged, and the rise of prices comes about naturally and promptly as the result of an unchanged demand meeting with a diminished supply.

The only circumstance that retards the rise of prices is that traders may at first be doubtful whether the rise is justified, and may for a time feed demand from stocks at the old price level. But this cannot continue long, because the traders will be driven to raise prices to protect their stocks from depletion.

Likewise, if productivity is increased or real costs are diminished, a stable price level means increased consumers' income and consumers' outlay. Profits are in the first instance swollen, and an increase in money wages becomes due. The increase in wages lags behind, and may be obtainable only at the cost of friction and possibly of trade disputes.

If it were possible to carry out the stabilisation of the monetary unit in terms of human effort with perfect exactitude, the predominant rate of unskilled wages would remain unchanged year after year, decade after decade, generation after generation. The only changes in wages that would ever have to be made would be in the nature of adaptations of the various classes of skilled and semi-skilled rates to the varying demand for the products upon which they are employed, and to the varying scarcity of the qualities and training required.

Undeniably friction would still be possible, but one terribly prolific cause of trade disputes would be avoided if no *general* rise or fall of the wage level were ever needed.

That does not mean that there would be stagnation in wages. But the advance of real wages through industrial progress would always take the form of a fall of prices and not of a rise of money wages.

At this stage it will be relevant to refer to an argument which has been put forward by Professor J. R. Commons of Wisconsin. He has pointed out that an

increase in productivity may be accomplished not only by new processes or new discoveries, but by a more effective co-operation on the part of the workmen. He holds that, if improved productivity emanates in this way from the workmen themselves, it should be felt in an increase of money wages rather than a fall of prices. This is, I think, in principle quite right. As a result of their good will or good sense the workmen are in reality offering a greater amount of effort. The factors of production employed are being increased, and the money remuneration should be increased accordingly. If the improvement occurs in one industry only, clearly there ought to be a relative improvement in the remuneration of the workmen to whom it is due. The only reservation which I should make is that in the particular case where the work-people have artificially raised their wages per unit of output in the past by an abuse of monopolistic power, it is not equitable (though it may be expedient or inevitable) to reward them for abstaining from this abuse.

TRADE DEPRESSION AND UNEMPLOYMENT.

The last of the three troubles caused by monetary instability is the fluctuations in productive activity. That is the most important of the three; it is the unemployment problem.

That deflation or a falling price level causes unemployment is generally accepted. But as to the precise manner and limits of this principle there is room for differences of opinion.

One form in which the principle is sometimes enunciated is that as a fall of wages lags behind a fall of prices, profits are encroached on by costs, and some business, becoming unprofitable, is abandoned. The volume of production is thus diminished and part of the work-people are thrown out of employment. So stated, the principle is nothing more than an incident of the disparity of wages and prices that we have already considered. The price of labour being too high, the demand for it falls off.

But there is much more in the principle than that. Another formulation of it is that the prospect of falling prices damps down enterprise, because it deters traders from holding stocks of goods. If prices are expected to fall, it pays to postpone purchases and to hasten sales. When the dealers in commodities adopt this course, producers find themselves with fewer orders, and the volume of production shrinks.

This is much nearer to an adequate account of the principle. And it brings out its relation to credit contraction. For credit contraction operates as a deterrent upon holding goods with borrowed money, and therefore produces the same kind of reluctance to buy as the expected fall of prices itself.

But I think the causation of unemployment by monetary contraction is best explained through the consumers' income and outlay. Suppose that anything occurs, whether a credit contraction, a decrease in velocity of circulation or anything else, to cause a reduction in the consumers' income. There will ensue a reduction of the consumers' outlay (not exactly equal, for consumers' balances may be drawn on). Thereby the total effective demand for commodities is curtailed. Dealers find their sales at existing prices falling off, and give smaller orders to the producers for the replenishment of their stocks. The diminished activity of the producers means a further diminution of the consumers' income and outlay. A vicious circle of diminished activity and diminished demand is set up.

This process begins and may even continue for a time without any fall of prices. The fall of prices arises partly from the desire of dealers to sell off stocks in face of the diminished demand, and partly from the desire of producers to keep up output. The reduction of prices in both cases will be tentative, and so long as it is in progress the possibility of a further fall will be present to the minds of both classes of traders as an additional motive for restraining enterprise.

The fall of prices, so far as actually accomplished, is

a relief; it makes a given amount of money-demand absorb a greater amount of goods. The difficulty of reducing wages prolongs the depression, because it obstructs the fall of prices.

Given that one of the objects of monetary stabilisation is to prevent a restriction of productive activity arising in this way, what form should the stabilisation take? So long as productivity is unchanged, it makes no difference whether we stabilise the money value of commodities or the money value of the factors of production. To choose between them, we must suppose productivity to change. Let productivity diminish; for example, let there be a scanty harvest. To keep the price index unchanged, there must be a reduction in the consumers' outlay in proportion to the reduction in the total output of the goods. A credit contraction must be set on foot. If we suppose the elasticity of demand for the products of which there is a shortage to be unity, then, so long as the consumers' outlay is unchanged, the total outlay on each class of products may remain just as it was before. The prices of the scarce products will have risen in direct proportion to their scarcity, and other prices will have remained unchanged. In order to restore the price index to what it was, the outlay on every class of products must be reduced.

Suppose, for example, that a consumers' outlay of £100,000,000 has been applied to 100,000,000 units of goods, and that producers who have hitherto received £20,000,000 for 20,000,000 units find their output reduced to 10,000,000 units, but the price of their product doubled. They still receive £20,000,000 and the other producers can continue to receive £80,000,000 for 80,000,000 units.

But as £100,000,000 is now spent on 90,000,000 units the price level has risen by one-ninth. In order to counteract that rise, the consumers' outlay must be reduced from £100,000,000 to £90,000,000. Every group of producers will find the total proceeds of its sales reduced by 10 per cent. Wages, profits and prices will be thrown out of proportion, and every industry will have to face the adverse effects of flagging demand and falling prices.

The producers whose prices have been raised by scarcity will be no exception. Their total receipts are reduced in the same proportion, and they must reduce wages like their neighbours.

The illustration does not depend on elasticity of demand being unity. If the shortage is in a product of which the elasticity is greater than unity, the adverse effect on the producers of that product is greater and on other producers less. If elasticity is less than unity the adverse effect on the former is less and may be more than counteracted, but what they gain their neighbours lose. Whatever the circumstances, the stabilisation of the commodity price level in face of scarcity will always tend to cause depression.

On the other hand, any such disturbance is completely avoided if the consumers' income and outlay are stabilised. There is, however, one difficulty that must be mentioned. Suppose that for any reason a decline of productive activity does occur and the available factors of production are under-employed. Stabilisation of the value of the factors of production would imply that the consumers' income and outlay are to remain correspondingly reduced.

This objection relates, however, to the policy of stabilisation in general, whether it be the commodity price index or the value of the factors of production that is stabilised. The answer to it is twofold. First of all, a reduction of activity is nearly always accompanied by relatively greater reduction of the consumers' income and outlay, and the correction of this latter would bring with it a restoration of activity. And secondly, in the case where this is not so, there is always a natural tendency for production to expand up to capacity, which will work its way unless counteracted by positive measures of credit restriction.

So long as there is no obstacle interposed to the expansion of credit *pari passu* with production, every increment of production brings with it an equal increment of demand. The same principle reconciles full employment with the growth of population and productive power.

I have shown that in the case where the prices of some

products rise owing to scarcity, the stabilisation of the consumers' income and outlay works better than the stabilisation of the commodity price level. The contrary case, where there is increased plenty or increased productivity in some industries, requires separate consideration. The prices of the plentiful commodities fall relatively to the others, and, if the price index is to be kept constant, these other prices must be allowed to rise. If the consumers' income and outlay are kept constant, the full effect of the improved productivity is felt in lower prices, and other prices remain unchanged.

There is no advantage in the latter alternative in regard to productive activity. The rise of prices in the former would tend to intensify activity, so that the difference, if any, would be in its favour.

But there would be no difference, or at any rate no important difference, unless industry as a whole were under-employed. That is a state of affairs that does not usually occur except as the result of a contraction of the consumers' outlay. So long as the consumers' outlay remains undiminished, any decline of demand in one direction will always be offset by increased demand in others.

In the particular case where the increased productivity is temporary, where, for example, it is due to an abundant harvest, the general rise of the prices of all other products is distinctly harmful. For when the temporary plenty passes, these other prices must be lowered again at the cost of depression and unemployment.

It is sometimes taken for granted that a fall of prices always causes depression, whatever the cause may be. But this is not so. In so far as the fall is due to diminished real costs or increased productivity in some industries, it has no restraining effect on enterprise. It causes loss to holders of stocks of the commodities affected, for their value falls to the same level as that of the fresh supply. But this loss has no resemblance to the *prospective* loss from a fall of prices which threatens when demand is contracting. A threatened loss in the latter case can be averted or minimised by postponing purchases and hastening sales. But where a reduction

of costs has cut down the replacement value of the goods, the sequence of events is quite different. Dealers are forced by competition to reduce the price to the consumer to correspond with the replacement value. The fall of prices being an accomplished fact, there is no motive to postpone purchases.

In the particular case where increased productivity is due to a temporary cause, such as an abundant crop, conditions are somewhat different. There is no definite replacement value to set a standard of price, and dealers may hang back till they believe the price has reached its lowest point. But this is not a case where the dealers' action will affect the activity of the producers.

THE RETAIL INDEX-NUMBER.

The foregoing arguments lead up to the conclusion that the most desirable kind of monetary stabilisation is stabilisation of the consumers' income and outlay—not absolute fixity, but the adjustment of the consumers' income and outlay to the growth of the factors of production, both on account of increasing man-power and on account of accretions of capital.

But still, for practical purposes of monetary policy, we must be guided by the available commodity price index-numbers, and must rely on the elimination of non-monetary disturbances to get the result we seek. We therefore have to choose what index-numbers to use for this purpose.

Some economists have advocated the use of retail index-numbers. At first sight this seems logical, for the consumers' outlay, so far as it is applied to consumption goods, is spent in retail. It is the demand at this final stage that is the test of the state of markets, and it is by their estimate of the retail demand that the producers and wholesale dealers are guided in deciding what prices to ask or to offer at all intermediate stages.

But it is a fatal defect of the retail price index that it only covers a part of the ground. The consumers' outlay is applied not only to consumption goods, but, through the

medium of the investment market, to capital goods. In order to be a fair sample, the price index must include capital goods, for example, iron, steel, engineering products and building materials, and this the retail index fails to do.

That being so, it is hardly necessary to consider in detail other defects in a retail index. It is enough to mention the want of sensitiveness, the difficulty of ascertaining the exact meaning of the quotations used in relation to the quality of the goods, and finally the predominance of working-class budgets as the basis of the retail indexes that are actually compiled.

In reality, just because retail demand is transmitted to wholesale markets, and retail prices ultimately govern wholesale prices, the wholesale index is just as representative as the retail index. And it has the advantage of greater sensitiveness and also of greater continuity and definiteness in the specification of the goods priced.

PRICES OF STOCKS AND SHARES.

It has sometimes been held that the price index should not be confined to the commodity markets, but should include the prices of stocks and shares in the investment market.

The consumers' outlay includes outlay on investment. Should not an index-number of things bought with the consumers' outlay include those bought by way of investment?

But *securities* are not really objects of expenditure at all. The true objects of expenditure are the capital goods over which the securities confer rights. The investment market is an intermediary between the outlay of investors on the one side and the production of capital goods on the other.

When an investor buys securities he pays their price to the seller. But the money is not by that transaction spent; it is simply passed on to await investment in the hands of the new owner. It may pass repeatedly from hand to hand and still be in the same condition. But as soon as it is applied to the purchase of a new capital issue, it really is spent on the creation of fixed capital.

The investment market is a body of traders buying and selling securities. Inasmuch as people change their investments from time to time, investors are both buyers and sellers, but in virtue of the growth of savings the purchases of investors exceed their sales. On balance, therefore, the investors' demand is always depleting the supply of securities in the hands of the market. The supply is made good by the new capital issues emanating from the promoters of capital enterprises. In the long run the new capital issues and the savings seeking investment must balance. When, over any interval, they do not balance, the effect is to increase or decrease the amount of securities held by the dealers in the market, and the dealers will thereupon take steps by a suitable movement of prices to bring back their holdings to normal.

The dealers carry part of their holdings of securities by means of bank advances, and any excess or deficiency of the investment money they receive over the money they pay for new issues takes effect in a decrease or increase of the indebtedness of the dealers to the banks.

The functioning of the investment market as an intermediary between investors and promoters is quite unaffected by the price level of the existing securities. Whether the prices be high or low, the purchase and sale of those securities can only transfer the money seeking investment from hand to hand on its journey towards its final destination as capital outlay. The prices determine the amount of *securities* that change hands in this process, but the amount of *money* depends not on the prices, but on the amount of savings seeking investment. The prices of new issues will, it is true, be closely related to the prices of existing securities, but that is because both are affected by the market rate of interest. In the case of the new issues the market rate of interest sets a standard to which the ratio of the expected yield to the capital outlay must conform. In the case of existing securities capital outlay has already been sunk, and price represents the appropriate number of years' purchase of expected yield. Capital outlay in the former case and expected yield in both cases are affected by the

commodity price level. But both the expected yield and the rate of interest are affected by causes which do not depend directly upon the value of the monetary unit.

The point may be illustrated from recent experience in the United States in the period up to 1929. Since 1923, when business first revived from the intense depression of 1921, there had been both a substantial fall in the rate of interest and a very large increase in the yield of industrial enterprises. The actual profits of a large and representative selection of concerns more than doubled between 1924 and the spring of 1929. This increase in yield was not attributable to any considerable increase in the consumers' income and outlay, but to improved methods, improved organisation and the increased scale of production.

A great part of the sensational rise in the prices of stocks and shares was due to these circumstances. If the expected yield of a share doubles because the price of the product has doubled, and if this rise of price no more than corresponds to a general rise in the commodity price level, then the consequent increase in the price of the share is evidence of a fall in the value of the monetary unit. But if the expected yield doubles in consequence of improved efficiency without any change of prices, the increased price of the share is not being paid for the same thing as before. The *real value* of the shares has increased.

It is essential to include in some form the prices of capital goods in the price index. But if we try to do this by including the prices of stocks and shares, we introduce a quantity of irrelevant matter, which would be even more difficult to disentangle than the non-monetary causes affecting commodity prices. If a price index has to be constructed to verify Professor Irving Fisher's Equation of Exchange and for no other purpose, there is something to be said for including prices of securities. Professor Fisher includes in the totality of transactions all dealings in securities. But to my mind that is a defect in his formula, and it would be an improvement to exclude all dealings in stocks, shares and pecuniary rights and to restate the Equation of Exchange, as Professor Pigou has proposed, in terms of transactions in goods and services only.

THE WHOLESALE COMMODITY INDEX AND THE EXTERNAL AND INTERNAL PRICE LEVELS.

For practical purposes, therefore, we are led to prefer an ordinary wholesale index-number, subject to allowance being made so far as possible for the disturbances due to non-monetary causes. If we wish to measure the change in the value of the monetary unit, we want the most representative index we can get. But if we wish to have prompt warning of the commencement of a change in its value, we shall compose our index rather of the most sensitive commodities than of the most representative. For this reason the American Bureau of Labour index is not altogether satisfactory. It is so comprehensive that it includes a large number of very insensitive prices. The less comprehensive numbers that prevail in Europe are really more useful. In America Professor Fisher's number is noticeably more sensitive than that of the Bureau of Labour.

One more question I must refer to, and that is the relation of internal and external prices. The internal price level is very difficult to sample adequately. The great majority of material products have an international market and contribute to the external price level. The residue is composed mainly of those which are either too bulky in proportion to value or too perishable to stand distant carriage, and for them price quotations are usually very unsatisfactory. The principal part of the internal price level is based upon the prices of *services*—services of construction, repair and cleaning, the preparation and serving of food, retailing, local passenger transport, domestic and personal services. House rent is another important item.

In some countries a prohibitive tariff places the prices of the products which it protects practically in the internal class, but that is so only so long as the tariff remains prohibitive, and so long also as the products do not enter into the export market.

In effect, most index-numbers are almost exclusively confined to the external price level. For the purposes of

monetary theory this is a serious defect. But it is not necessarily so for the purposes of monetary policy. Plans for price stabilisation by one country in isolation from its neighbours are not at the present time within the range of practical politics. The world is likely to revert to the general use of gold as an international standard, and price stabilisation must then mean the stabilisation of the world value of gold. But even if it does not we may confidently anticipate that the currencies of different countries will be linked together by fixed parities in some other way. In either case what we need is an index of world prices.

An index of world prices will be composed of the same commodities that predominate in the European index-numbers we already have. They have the advantages of regular, continuous and ascertainable quotations and of sensitiveness. For the elimination of non-monetary causes we must rely on information with regard to world crops, to the opening up or exhaustion of sources of supply, to changes in industrial processes, and to any events, such as Kartel agreements or industrial disputes, which may temporarily affect any important class of industries.

It must be admitted that stabilisation of world prices will leave some room for variation in internal price levels. Any country which experiences a disturbance of its balance of payments must suffer from a modification of its internal price level relative to its external. If it maintains the gold standard, the external price level is thereby fixed, and the change is concentrated in the internal. That is a consequence of the gold standard itself, and is not aggravated in any way by the stabilisation of gold. Variations in the world value of gold may either increase or diminish the variation of the internal price level on such an occasion, and are not more likely to do one than the other. But on all *other* occasions they are a wanton cause of trouble.

CONCLUSION.

We started by saying that monetary theory is concerned with causes which affect all prices. But when it came to

detecting those causes by the use of a sample of prices in the shape of an index-number, we found the process to be complicated by the intrusion of non-monetary causes, those confined to particular prices or groups of prices. We are now in a position to state more precisely what is the nature of the monetary causes that we have to detect. They are causes affecting the amount of the consumers' income and outlay otherwise than in proportion to the factors of production. Our sampling should be designed to discover the action of such causes and to separate them from the rest. The reason is that the injuries to the economic system attributed to monetary disorders are traceable to these causes.

Incidentally, this conclusion supplies a definition of inflation and deflation. If these terms mean an *undesirable* excess or deficiency of the means of payment we can say that inflation means an expansion of the consumers' income and outlay, and deflation a contraction, more than in proportion to the factors of production employed.

CHAPTER VI.

MR. KEYNES'S *TREATISE ON MONEY*.

I. MR. KEYNES'S DEFINITIONS.

MR. KEYNES'S analysis is founded on the two conceptions of Investment and Saving, and in order to understand his position, it is essential to be clear as to the very specialised meanings he assigns to them by definition. To this it will be best to lead up by way of his preliminary definitions.

The incomes of the community are paid to them for producing all the goods and services that form the output of the community. The wages, salaries, interest and rent which remunerate the factors of production (labour, capital, management and land) are paid by the entrepreneurs out of the proceeds of sale of the products. (There are, of course, some incomes which are not paid for any services rendered towards current production—e.g. old age pensions, or interest on securities not represented by existing productive capital—but these incomes, I presume, can be regarded as charged contractually or fiscally upon the productive incomes.)

In ordinary parlance, the margin of gain remaining to the entrepreneur after paying the factors of production is regarded as his "income." If the incomes of the entrepreneurs so reckoned are added to the incomes derived from wages, salaries, interest and rent, the total arrived at (which is what in my own analysis I call the "consumers' income") is equal to the selling value of the entire output of the community.

Mr. Keynes, however, distinguishes the actual net gains so calculated from the "normal remuneration of the entre-

preneurs." Their normal remuneration he defines as "that rate of remuneration which, if they were open to make new bargains with all the factors of production, at the currently prevailing rates of earnings, would leave them under no motive either to increase or to decrease their scale of operations" (vol. i., p. 125).

Therefore when the actual net gains of the entrepreneurs are equal to their normal remuneration there is then, so far as the price level is concerned, a position of equilibrium, in which the entrepreneurs have no motive either to increase or to decrease their productive activity. But a change in the price level (unless accompanied by corresponding changes in wages, etc.), will disturb this position. If actual net gains exceed normal remuneration, the entrepreneurs will seek to expand their operations, and in the contrary case to curtail them.

The excess, when it occurs, of the actual net gains over the normal remuneration of entrepreneurs Mr. Keynes calls "Profit." A deficiency is negative profit (loss). In view of the common use of the term profit to mean the total net gain of the entrepreneur, he suggests "Windfall" as an alternative, and I shall call the excess a "Windfall Gain" and the deficiency a "Windfall Loss."

Mr. Keynes regards only the normal remuneration of the entrepreneurs as properly constituting their "income" or "earnings"; a windfall gain or loss he treats as a *capital* item, increasing or diminishing their accumulated wealth. Cost of production he defines as the same as the earnings of the factors of production, including the earnings or normal remuneration of entrepreneurs.

Thus total cost of production of output differs from the total selling value of output by the net amount of windfall gains and losses. A rise or fall of the price level (so long as there is no change in wages, etc.) occasions a difference between the selling value of output and costs.

I think it will be convenient to retain the ordinary meaning of the word "income" and to distinguish it from "earnings." Thus the aggregate of all incomes (the "consumers' income") is equal to the total selling value of output

and the aggregate of earnings is equal to the total cost of production of output, and a windfall gain (or loss) is the excess (or deficiency) of incomes as compared with earnings.

By *Investment* Mr. Keynes means the net increment of the material wealth or capital of the community. It is the excess of output over consumption, that is to say, over the volume of consumption goods and services purchased by consumers. Investment *plus* consumption are together equal to output and therefore to consumers' income.

Investment includes on the one hand any new instrumental goods and any net addition (positive or negative) to working capital (outlay on goods in process), and on the other any net addition (positive or negative) to liquid capital (goods held in stock). If any part of output remains unsold, that is a part of "investment."

Investment does not include an appreciation of *existing* assets through a rise of prices. It is "not the increment of value of the total capital, but the value of the increment of capital during any period" (vol. i., p. 126).

By *saving* Mr. Keynes means the excess of earnings over consumption. If a man uses a windfall profit to increase his accumulated wealth or capital, that is not a part of saving so defined; Mr. Keynes regards the windfall gain as capital when it accrues. Likewise if a man suffers a windfall loss, and meets it out of capital, this is not treated as diminishing his savings.

II. THE FUNDAMENTAL EQUATIONS.

Mr. Keynes uses the following symbols :

O = total output of goods in terms of physical units of quantity.

R = the volume of consumption goods and services flowing on to the market and purchased by consumers.

C = investment.

Then $O = R + C$.

P = price level (average price per unit) of consumption goods.

P' = price level of investment goods.

W_1 = cost per unit of goods of both kinds.

Then

W_1R = cost of consumption goods.

PR = selling value of consumption goods.

W_1C = cost of investment.

$P'C$ = value of investment.

From these are built up the following :

$Q_1 = PR - W_1R$ = windfall gains on consumption goods.

$Q_2 = P'C - W_1C$ = windfall gains on investment goods.

$Q = PR + P'C - W_1(R + C)$ = total windfall gains.

E = Earnings = $W_1(R + C)$.

$E + Q = PR + P'C$ = value of output (consumers' income).

S = Savings = $E - PR$
 $= W_1R + W_1C - PR.$

I = value of investment = $P'C.$

I' = cost of investment = $W_1C.$

$I - S = Q.$

$I' - S = Q_1.$

From these we arrive at the two Fundamental Equations :

$$\begin{aligned} (1) \quad I' - S &= PR - W_1R \\ PR &= W_1R + I' - S \\ P &= W_1 + \frac{I' - S}{R} \\ &= \frac{E}{O} + \frac{I' - S}{R}. \end{aligned}$$

(2) The price level of output as a whole

$$\begin{aligned} &= \frac{PR + P'C}{O} \\ &= \frac{E + Q}{O} \\ &= \frac{E}{O} + \frac{I - S}{O}. \end{aligned}$$

From the first Fundamental Equation we find that the price level of consumption goods is made up of two terms, the first of which represents the cost of production and the second of which is positive, zero or negative according as the cost of new investment exceeds, equals or falls short of the volume of current savings.

From the second Fundamental Equation we find that the price level of output as a whole is likewise composed of two terms, the first being cost of production as before, while the second depends on the difference between savings and the *value* of new investment.

The second term in either equation is, in virtue of Mr. Keynes's definitions, made to depend upon the difference between savings and the cost or the value of investment. But this difference is in reality simply the difference between *prices and costs*. All that the fundamental equations disclose is that the price level is composed of two terms, one of which is cost per unit and the other is the difference between price and cost per unit.

III. SAVING, INVESTMENT AND THE PRICE LEVEL.

Thus the difference between saving and investment is simply another name for the windfall gains or losses or for the difference between prices and costs of output. Throughout the Treatise Mr. Keynes adduces a divergence between saving and investment as the criterion of a departure from monetary equilibrium. But this criterion is nothing more or less than a divergence between prices and costs. Though the criterion ostensibly depends on two economic activities, "investment" and "saving," it depends in reality not on them but on movements of the price level relative to costs.

That does not mean that the price level may not be influenced by changes in investment or in saving in some sense. But Mr. Keynes's formula does not record such changes till their effect upon the price level is an accomplished fact.

Now if anything occurs to affect the demand for goods

of any kind or of all kinds, the first result is an increase or decrease in sales *at existing prices*, and therefore a decrease or increase in stocks of the goods concerned. There is always some interval of time before prices are adjusted, and the interval may be considerable. And further an acceleration (or retardation) of sales of any product tends to cause an increase (or decrease) in production, *before* any change is made in the price to the consumer.

We have here a disturbance of equilibrium which precedes any change of prices, and which therefore precedes any windfall gain or loss and any difference between saving and investment as defined by Mr. Keynes.

Even if the change of prices begins at once, still, so long as the change is not *in proportion* to the change in demand, there will be a residual effect on the volume of sales. The effect on production will depend not on the price movement alone, but also on the acceleration or retardation of sales.

Numerical examples will make the point clearer. Suppose that consumers' income and outlay balance at £100,000,000 a month, that the expenditure on consumption is £90,000,000, and that savings and investment balance at £10,000,000 a month.

Let the public start saving £15,000,000 a month instead of £10,000,000. The expenditure on consumption is thereby reduced to £85,000,000. In the first instance there would be no reduction of prices, and, in virtue of the retardation of sales, stocks of unsold goods would begin to accumulate at the rate of £5,000,000 a month. At that stage Mr. Keynes's formula reveals no difference between saving and investment, because the failure to sell output is itself a form of investment.

Traders will not be content to accumulate unsold stocks indefinitely. But the first action taken will not necessarily be a reduction of prices. There may be a reduction of orders to producers and a reduction of output.

Suppose the output of consumption goods is reduced from £90,000,000 to £85,000,000 and earnings are reduced from £100,000,000 to £95,000,000. If savings continue unchanged at £15,000,000 a month, the expenditure on

consumption is reduced to £80,000,000, and the accumulation of unsold stocks still goes on.

Eventually, it is obvious, some reduction would be made in prices. But meanwhile there might have occurred a heavy curtailment of output. And incidentally it may be pointed out that this progressive contraction in the consumers' income could not fail to cause some falling off of savings.

Mr. Keynes is inclined to assume that the accumulation of unsold stocks is small and therefore unimportant. In the illustration it is very small; it would only amount to five days' supply at the end of three months. But it is not unimportant, for it is the indispensable condition of a lag of the change of prices behind the variation in sales. It is in virtue of this lag that the fall of prices and therefore the windfall loss only occur at an interval after the shrinkage in demand. And in that interval there may occur a considerable curtailment of productive activity and growth of unemployment.

Mr. Keynes's formula picks up the situation at the end of the interval. But by that time the items of his fundamental equations, other than the price level, will have been very materially altered.

IV. THE PRICE LEVEL.

And when changes of prices do begin, they will probably be in the first instance changes in the wholesale market, which do not immediately affect the prices charged to consumers and final purchasers.

The price level of consumption goods, P , is the inverse of the purchasing power of money. It should include "once and once only all the items which enter into final consumption (as distinct from an intermediate productive process) weighted in proportion to the amount of their money income which the consuming public devote to them" (vol. i., p. 57).

The price level of investment goods, P' , is a blend of the price levels (1) of instrumental goods, (2) of consumption goods added to stock, (3) of working capital or goods in process. But the first item would usually predominate, and

Mr. Keynes is inclined to identify the price level of investment goods with the price level of capital goods or instrumental goods (vol. i., p. 154). The price level of instrumental goods, when distinguished from working capital, means the price level of *finished* instrumental goods. It would include the price of a completed dock, harbour, road, railway, or factory, or of any completed piece of plant (e.g. a lathe or a locomotive) but not that of steel girders or rails, bricks, cement or timber. Thus the price level of output as a whole is substantially the price level of *finished* goods, and windfall gains or losses represent the difference between the prices and costs of finished goods.

If we suppose no net addition to be made to working capital or to stocks of commodities, this is rigorously true. If the price of any unfinished or intermediate product diverges from its cost, there results a windfall gain or loss to the producer. But so long as there is no divergence of the price of the finished product from its cost, this windfall gain or loss is offset by an equal loss or gain to the purchaser of the intermediate product.

In this connection an intermediate product must be taken to be a product in any stage short of sale to the consumer or final purchaser. It includes the goods sold at wholesale prices to the retailer in a completely finished state, for the retailer's windfall loss or gain arises from the gap between wholesale and retail prices being less or greater than normal.

If the output of an intermediate product so defined exceeds what is needed to keep pace with the sales of the final product, the windfall gain or loss of the producer or seller of the former will not be completely offset. There will be an addition to the stock of the intermediate product, which is an "investment" and, being valued at its market price, brings with it a windfall gain or loss. The price level of investment goods will to that extent be based on unfinished goods. In so far as it is not intermediate goods in marketable form, but the outlay on goods in course of production that is outstripping sales of the finished product, the price level will comprise items which are themselves actual costs.

There may also arise the contrary case, where the output of the intermediate product lags behind the sales of the finished product. If we suppose the price of the intermediate product to have risen above cost, and the price of the product at the next stage to be unchanged, clearly those who buy the former and sell the latter will incur a windfall loss on so much of their sales as are the equivalent of their purchases. If they sell *more* than this, are they to be deemed to be incurring the same windfall loss on the excess? I think this is the right interpretation, for the quantity, R , of consumption goods included in output is the quantity "purchased by consumers." If so, the price level of investment goods must contain the intermediate product *weighted as a negative quantity*.

For example, suppose that there is an output of capital goods costing £10,000,000 a month, and that owing to a monetary disturbance the price of these goods rises 10 per cent. so that there is a windfall gain of £1,000,000 a month to the producers. And suppose also that the disturbance occasions an output of intermediate products exceeding what is required to keep pace with actual sales of finished products by an amount costing £5,000,000 and sold at an advance of price of 25 per cent. Then there is a further windfall gain on the intermediate products of £1,250,000 making £2,250,000 in all. The rise in the price index of investment goods will then be $\frac{2,250,000}{15,000,000}$ or 15 per cent.

If, on the other hand, the output of intermediate products *falls short* of what is required to keep pace with actual sales of finished products by an amount costing £5,000,000 and sold at an advance of price of 25 per cent., then the net amount of investment costs £10,000,000 — £5,000,000, or £5,000,000, and is priced at £11,000,000 — £6,250,000, or £4,750,000, and there is a windfall loss of £250,000 and a fall in the price level of 5 per cent. although the prices of both finished goods and intermediate products have risen.

It is only in the case where the increment of investment includes some net addition to the stock of intermediate products that the price level in Mr. Keynes's fundamental

equations reflects the prices of intermediate products at all, and in the case where there is a net reduction in the stock of intermediate products the price level is influenced in the *contrary* direction to the prices of intermediate products.

Practically we can treat Mr. Keynes's price level as the price level of finished goods, subject only to a slight correction for intermediate products in certain cases.

Now the prices of finished goods are much less sensitive than those of intermediate products. In general, when a change in the price of any commodity is called for by a change in demand, the signal is given by an actual change in the volume of sales at the existing price. Now and then it may happen that traders can foresee a disturbing cause which is likely to affect demand, and will adjust prices in anticipation. But far more often the adjustment of price is an empirical process arrived at by the method of trial and error. The fact that there is a considerable lag in the adjustment of retail prices to demand is so notorious that it hardly needs to be supported either by evidence or by argument.

If retail prices were immediately and exactly adjusted to a change in demand, there would be no change in the volume of sales. Where a trade is so organised that there is a complete differentiation of function between retailers and producers, the retailers' orders to the wholesale dealers and producers would then be precisely what they were before, and there would be no inducement for the producers to modify their prices at all. There must be *some* shrinkage of orders to bring about any reduction in wholesale prices, and the retailers cannot afford to reduce the price asked from the consumer till the wholesale price has come down. First there is a falling off of sales, then a reduction in the retailers' orders to the wholesale dealers, then a reduction of output, then a reduction of the price asked by the producer and only then a reduction of the retail price.

If it were possible for producers, by cutting prices, immediately to find a price at which the demand will absorb all their output, they might be expected to do so. But there are several reasons why this cannot be done. Where

retailing and producing are separate, the producer has no means of knowing how much of any price concession that he may make will be passed on to the consumer. For all he knows, the retailer may keep his price unchanged, so that the producer's concession will be a free gift to the retailer and will do nothing to stimulate demand. And this is true at each stage of manufacture. The further removed any process is from the delivery of the final product to the consumer, the smaller is the proportion of the price to the price of the final product, and the smaller is the effect of any price concession (if passed on) upon the consumers' demand. The greater the number of intervening processes and transactions, the greater the chance of the price concession being intercepted and not passed on to the consumer at all.

In the case where the functions of producer and dealer are merged, and the producer dictates the retail price and the retailers' margin, it would be possible for the producer to stimulate the consumers' demand by price concessions directly. But he does not alter his price list in response to every fluctuation in sales. He will let the first impact of such a fluctuation fall on his stocks, and will only begin to consider an alteration either of price or of output when faced with an inconveniently persistent variation in his stocks. And when he is forced to choose between a reduction of output and a reduction of price, he will probably in the first instance prefer the reduction of output. A business of this type depends on the goodwill created by advertising, in which the price of the product plays an important part. A price concession has to be extensively advertised, and, once established, is very difficult to withdraw. The manufacturer is therefore extremely reluctant to initiate a price concession which he cannot see his way to make permanent. And experience shows that the retail prices of proprietary articles do not move often or easily.

The want of sensitiveness of retail prices is partly also due to the wide day-to-day variations of retail sales. A day's or a week's sales of any commodity taken by themselves give very little evidence of tendencies. This fluc-

tuating demand is partly averaged and smoothed out in the orders given to wholesalers, but a considerable interval, probably amounting to months, must elapse before a definite trend is established.

It must be remembered that the price level we are considering comprises not only the retail prices of consumption goods, but also the prices of completed instrumental goods. These are very often not standard articles offered at standard prices, but big units made according to specification for a contract price. The producer is free to adapt the price asked to circumstances. When demand falls off, prices are cut, and those producers who do not cut them enough are left under-employed. But here also the cutting of prices always lags behind the shortage of orders. It is only by trial and error that producers discover how much prices must be cut to keep their undertakings employed. And anyone who miscalculates and goes too far may find himself prevented by the less profitable from accepting the more profitable orders.

V. A LESS RIGID INTERPRETATION OF THE DEFINITIONS.

If we press Mr. Keynes's definitions to their logical conclusion, we find that his fundamental equations are rigidly tied down to *actual* changes in prices and costs, which are already effective in the market. There can be no difference between investment and saving, as defined by him, till there has been a change in the price level relative to cost of production.

And he is mistaken in treating the discrepancy between investment and saving, when it does occur, as the *cause* of the divergence between prices and costs; it *is* the divergence between prices and costs. When saving differs from investment, this represents not a change in the *behaviour* of the public in regard to the accumulation of unspent sums, but a change in the classification of the sums they receive as between earnings and windfalls. The occurrence of a divergence between prices and costs brings about this change of classification not in virtue of any causal relation,

but in virtue of a *definition*; the change is not causal but logical.

But criticism of Mr. Keynes's theory on these lines would be, I think, pedantic and sterile. If his definitions are imperfect (like nearly all definitions employed in the social sciences) that does not entirely invalidate the reasoning in which they are employed.

Mr. Keynes so far qualifies this rigid theory as to say that it is "the anticipated profit or loss on new business, rather than the actual profit or loss on business just concluded, which influences entrepreneurs in deciding the scale on which to produce and the offers which it is worth while to make to the factors of production" (vol. i., p. 159).

Now the definition of saving and investment, as employed in the fundamental equation, absolutely excludes any account being taken of a forecast of prices or of profit. And accordingly this qualification may be read as inviting a less rigid interpretation.

Personally, I should not quite accept Mr. Keynes's version of the psychology of the entrepreneur. I should say that the decision as to the scale on which to produce is based mainly on *current demand*, as measured by the retail sales and by the orders given by dealers to producers, and that a forecast of the future price is usually a secondary factor. But the distinction is not of great practical consequence, for a forecast of price, if operative at all, is likely to be based to a very great extent upon the current volume of sales and orders.¹ I may point out that the term "entrepreneurs" as used by Mr. Keynes apparently covers all classes of traders, dealers in goods as well as producers.

VI. "DECISIONS" GOVERNING SAVING AND INVESTMENT.

Mr. Keynes repeatedly refers to saving and investment as being the results of "decisions."

"Saving is the act of the individual consumer and consists in the negative act of refraining from spending the whole of his current income [i.e. earnings] on consumption.

¹ Forecasts based on changes in *supply* are not here in point.

"Investment, on the other hand, is the act of the entrepreneur whose function it is to make the decisions which determine the amount of the non-available output [instrumental goods and unfinished goods] and consists in the positive act of starting or maintaining some process of production or of withholding liquid goods" (vol. i., p. 172).

Now the fundamental equations are, as Mr. Keynes points out (p. 138), "purely formal; they are mere identities; truisms which tell us nothing in themselves. . . . Their only point is to analyse and arrange our material in what will turn out to be a useful way for tracing cause and effect."

In order that they may serve this purpose, it is essential that savings and investment, as defined by Mr. Keynes, and employed in the fundamental equations, should be *the same things* as are determined by the "decisions" in which he finds their causation.

With regard to savings, the individual consumers decide what they shall spend (or refrain from spending) on consumption. The balance of their earnings is "savings." But the balance of their incomes (earnings *plus* windfall gains) is "investment." Their decisions determine the amount of investment just as truly and in just the same way as they determine the amount of savings.

For all except entrepreneurs earnings and income are the same. For entrepreneurs they differ if, and only if, there is a windfall gain or loss. But if there is a windfall gain, the recipients must decide what to do with it exactly as with any other receipt. If there is a windfall loss, the victims are deemed, according to Mr. Keynes's definition of saving, to "save" the money they do not receive. But this is the result of the definition, not of any "decision."

But if investment is determined by these decisions respecting expenditure on consumption, how can it be determined simultaneously by the decisions as to the non-available output? The fact is that the non-available output is something different from what Mr. Keynes defines as investment.

The available output is defined as the flow of goods and services which are in a form available for immediate

consumption (vol. i., p. 127). It is contrasted with the non-available output, which includes, besides instrumental goods, any net addition to goods in process, and it is explained that "normal stocks required for efficient business are part of Working Capital and therefore in process" (vol. i., p. 129).

We may infer accordingly that any goods otherwise "in a form available for immediate consumption," but required for normal stocks, are not part of available output.

But *any* addition of goods to stocks is a part of investment, whether required for normal stocks or not. The consumers decide their expenditure on consumption, that is to say, how much of the available output they will buy. If they buy less than the available output, the rest remains in the form of unsold stocks. Here is an addition to investment which is not due to any decision on the part of entrepreneurs, but to a mere failure to sell output. Similarly, if consumers buy more than the available output, the excess is supplied from stocks, and there is a subtraction from investment.

The non-available output or, as it may be conveniently called in terms of money, the "capital outlay," determined by the decisions of the entrepreneurs, differs from investment as defined by Mr. Keynes by the amount of the accidental or involuntary increments and decrements of stocks of goods due to actual sales differing from expectations.

When there is a discrepancy between the decisions of consumers as to their expenditure on consumption goods and the decisions of entrepreneurs as to the relative amounts of available and non-available output, the immediate result is not a difference between "savings" and "investment," but a difference between "investment" and capital outlay.

Reverting to the numerical example given above, where consumers' income is £100,000,000 a month, and savings and investment balance at £10,000,000, so that the available output is £90,000,000, we may suppose that the consumers reduce their consumption expenditure to £85,000,000. The first effect is that unsold goods begin to accumulate at

the rate of £5,000,000 a month, and, as we saw, investment is still equal to savings. But there is a difference of £5,000,000 a month between savings or investment on the one side and capital outlay on the other.

After the first impact several adjustments will begin to be made. The falling off of sales of consumption goods will bring about both a reduction of output and a fall of prices. In both respects there results a compression of the consumers' income, which will presumably cause both a further reduction of consumption expenditure and a reduction of investment.

The removal of the discrepancy between investment and capital outlay is an essential condition of a return to equilibrium. So long as investment exceeds capital outlay, the accumulation of unsold goods continues,¹ and with it the two tendencies towards a reduction of output and a decline of prices. But the equality of investment and capital outlay, though a necessary condition, is not a *sufficient* condition of equilibrium, so long as prices are too low relatively to costs and so long as industry is under-employed.

In this analysis the difference between investment and capital outlay (which arises from a disharmony between the "decisions" of consumers and entrepreneurs) plays a part very like that which Mr. Keynes assigns to the difference between savings and investment. But "investment" assumes the functions which he attributes to "savings."

Investment, as he defines it, may be regarded from two points of view. It is the aggregate of the excesses of people's incomes over their consumption expenditure. But it is also the increment of the physical wealth or capital of the community.

Seeing it in the former aspect, unconsumed income, we find it to be precisely what is ordinarily called "savings."

¹ The accumulation may not be all of finished products. If the demand for boots falls off, the output of boots may be so promptly reduced that there is little or no accumulation of the finished article, but there may be an accumulation of leather and hides.

And perhaps that is why it is determined by the same decisions in regard to consumption expenditure as savings in Mr. Keynes's sense, unconsumed "earnings." These latter are simply investment, *minus* windfall gains, *plus* windfall losses, and the windfall gains and losses are determined by the play of markets, and not directly by the decisions either of consumers or of entrepreneurs.

An important part of Mr. Keynes's theory of savings and investment is the doctrine that a decision to save is, from the social point of view, abortive, unless accompanied by a corresponding decision by entrepreneurs to invest. It produces no increment of wealth unless the equivalent investment occurs, for the increment of wealth *is* investment.

But we now find that what the entrepreneurs decide is not the amount of the increment of wealth, but the amount of capital outlay. If capital outlay does not keep pace with savings, while investment does, the result is that part of the increment of wealth is represented by unsold goods. To that extent the savings are abortive, for the unsold goods are a mere embarrassment. They may be counted as wealth, and indeed are available for consumption, but *ex hypothesi* they are not being consumed, and their effect must presently be a reduction of output and a fall of prices. It is only the fall of prices (which, when it comes, tends to stimulate the consumption of the redundant goods) that brings about a deficiency of investment according to Mr. Keynes's definition.

When the state of demand and supply calls for a rise or fall of prices, but no rise or fall actually occurs, and there results a decrement or increment of stocks of goods, we may say that there is a "virtual" rise or fall of prices. A virtual rise or fall of prices involves a departure from equilibrium, since an increase or decrease of stocks of goods cannot continue indefinitely, and it must be corrected sooner or later. Unless the change in demand and supply proves to be transitory, either there must be an increase or decrease of output, or the virtual rise or fall of prices must give place to an actual rise or fall.

An excess of investment over capital outlay means simply a virtual fall of prices. An excess of savings over investment, a windfall loss, means an *actual* fall of prices. We might perhaps regard the former as a modification of the latter. In Mr. Keynes's analysis the windfall loss is the precursor of a reduction of output. When the virtual fall of prices takes effect directly in a reduction of output, this might be treated as an abridgment of a more complex process starting with the virtual fall of prices, continuing with an actual fall and ending with a reduction of output.

It has been pointed out above that a difference between savings and investment cannot be regarded as the cause of a windfall loss or gain, for it *is* the windfall loss or gain. To find a causal sequence, we must turn to the decisions relating to consumption and capital outlay. When we do so, we find the windfall loss or gain to be one only among several consequences, and neither the earliest, nor necessarily the most important.

Throughout the *Treatise* Mr. Keynes refers to these decisions, and bases his argument upon them. And I think it is true to say that almost everywhere what he says may be interpreted as applying to the modified analysis which we have arrived at just as well as to that embodied in his fundamental equations.

That is to say, we can *drop* the fundamental equations and the definition of savings and investment as unconsumed earnings and unconsumed income, and we can substitute, wherever they are used, the modified definitions of savings as unconsumed income and investment as capital outlay.

I venture to say that in the minds of many of Mr. Keynes's readers, and sometimes in the mind of Mr. Keynes himself, the meaning attached to the difference between savings and investment is much closer to the difference between unconsumed income and capital outlay, than to the difference between unconsumed earnings and unconsumed income.

VII. AN ALGEBRAIC ANALYSIS.

A statement in algebraical terms may help to elucidate this alternative interpretation.

Assume at the outset a state of equilibrium. Let the price level be equal to costs for both consumption goods and capital goods, and let expenditure on consumption exactly balance available output.

Then earnings are equal to consumers' income, and savings, investment and capital outlay are equal to one another.

Available output	= A .
Non-available output	= N .
Price level	= P .
Expenditure on consumption = value of available output	= PA .
Capital outlay	= PN .
Consumers' income	= $PA + PN$.

Now let the expenditure on consumption be decreased by b and become $PA - b$, available and non-available output and the price level remaining unchanged. Then investment is increased by b and becomes $PN + b$, while capital outlay remains at PN . The difference between them is accounted for by an addition to stocks, a portion of the available output to the value of b remaining unsold. Investment and saving remain equal to one another.

A continuing accumulation of unsold goods at the rate of b per unit of time cannot go on indefinitely. It will lead to a reduction of output and a reduction of prices. Let the available output be reduced by a , and the price level of consumption goods by p .

Then the value of the available output becomes $(P - p)(A - a)$ and the accumulation of unsold goods becomes

$$\begin{aligned} & (P - p)(A - a) - (PA - b) \\ & = b - pA - Pa + pa. \end{aligned}$$

There is now a windfall loss of $p(A - a)$ and savings exceed investment by that amount.

Earnings	$= P(A - a) + PN.$
Savings	$= P(A - a) + PN - (PA - b)$ $= PN + b - Pa.$
Consumers' income	$= (P - p)(A - a) + PN.$
Investment	$= (P - p)(A - a) + PN - (PA - b)$ $= PN + b - Pa - pA + pa.$

Thus investment exceeds capital outlay by the amount of unsold goods.

If $PA - b$, the expenditure on consumption, were absolutely fixed, we could say that the condition for a provisional equilibrium would be:

$$b = Pa + pA - pa.$$

For the accumulation of unsold goods would then cease. The equilibrium would only be provisional, because the producers of consumption goods would be under-employed and would also be sustaining a windfall loss.

But the expenditure on consumption will not be independent of the consumers' income, which we now suppose to be reduced by $Pa + pA - pa$. People will tend to reduce expenditure on consumption still more. We cannot say what function the reduction of consumption will be of the reduction of incomes. But we may assume for purposes of illustration that the reduction of income is divided in a fixed proportion ($k : 1 - k$) between consumption and investment. (It will be remembered that "investment" here means what is ordinarily called "Savings," the excess of incomes over consumption expenditure.)

Then, if b was initially b' (a constant), we may suppose that $b = b' + k(Pa + pA - pa)$.

The condition of provisional equilibrium becomes

$$b' + k(Pa + pA - pa) = Pa + pA - pa$$

so that

$$Pa + pA - pa = \frac{b'}{1 - k}.$$

That is not a determinate result, for it says nothing as to how much of the adjustment is to come from the reduction of output by a , and how much from the fall of the price level by p .

It has been pointed out above (p. 347 note) that, when consumption declines, the accumulation of unsold goods will be partly in the form of intermediate products and raw materials, the output of which is to be included, according to Mr. Keynes's definitions, in non-available output. It will be convenient, however, for the purposes of our algebraical formulæ to keep with the available output those materials and intermediate products which are destined to be worked into consumable products. Perhaps we may use the expression "consumable output" to represent this modification of the available output.

The corresponding modification of the non-available output we may call "capital output." Capital output therefore excludes the output of materials and intermediate products which are destined to be worked into consumable products, *in so far as they become surplus*. In so far as a net addition to them is required to maintain normal stocks they are included in capital output, along with those finished products which are required to maintain normal stocks. Capital outlay we will interpret as the outlay on capital output.

We have hitherto assumed capital outlay to remain unchanged. But there will be several causes at work tending to modify it. The increased margin of incomes over consumption expenditure (investment or, in ordinary language, savings) would tend to encourage capital outlay. The reduction of consumers' income would tend to diminish this encouragement. But in the interval up to provisional equilibrium investment will always have exceeded capital outlay and, so long as that is so, capital outlay is stimulated.

On the other hand, the accumulation of unsold stocks tends to check capital outlay. For capital outlay includes the output required to maintain normal stocks. If stocks are reduced below normal, the additional output required to restore them is part of non-available output, or capital

outlay. And similarly, when stocks are increased above normal, output is reduced, and this reduction must be regarded as *negative* capital outlay.

Then the reduction of the available output will diminish the requirements for working capital. And the fall in the prices of consumption goods will mean a fall in the prices of such part of the non-available output as is composed of consumption goods in process, and therefore a fall in capital outlay.

On the whole we cannot be certain whether capital outlay will have been increased or diminished. There is the possibility that from the very beginning the increase in investment might so stimulate capital outlay that there would be no decrease at all in the consumers' income. Or alternatively the stimulative effect may be slight, and the tendencies to decrease may predominate. In either alternative the effect will be merely a particular application of the general case of a change occurring in capital outlay. And that we will proceed to examine.

We will start with a *reduction* of capital outlay. Going back to the initial conditions of equilibrium, let the capital output be reduced by n . There will probably also be a reduction of prices, for the decisions by which the reduction of the capital output is caused will be decisions not of those who *produce* capital goods, but of those who *buy* them. The producers are likely to respond to the decline in demand by cuts in prices as well as by reduction of output. If the price level of the capital output is reduced from P to $P - p'$ then the capital outlay becomes $(P - p')(N - n)$. Consumers' income is reduced by $Pn + p'N - p'n$ and there will result a reduction of consumption expenditure which we will again call b , and that in turn will cause a reduction of consumable output by a , and of the prices of consumption goods by p .

Consumers' income becomes

$$(P - p)(A - a) + (P - p')(N - n).$$

The condition of provisional equilibrium is still

$$b = Pa + pA - pa,$$

but when we come to work out the value of b , we have $b' = 0$, and

$$b = k(Pa + pA - pa + Pn + p'N - p'n),$$

so that

$$Pa + pA - pa = \frac{k}{1-k}(Pn + p'N - p'n) = b.$$

For the case where capital outlay is increased, the algebra is the same. We merely change the signs of n , p' , a , p and b . Consumers' income = $(P + p)(A + a) + (P + p')(N + n)$.

$$Pa + pA + pa = \frac{k}{1-k}(Pn + p'N + p'n) = b.$$

But here there is an underlying condition that production must not exceed capacity. That will put a limit to $a + n$. It may also put limits to a and n separately, but it must be remembered that n includes increments of working capital in industries which produce consumption goods, and also that the capacity of the plant in either group of industries would probably have a large margin, so that the limit to $a + n$ would be imposed not by the capacity of plant but by the supply of labour. When $a + n$ approaches the limit, the algebraic formula is not itself affected, but the tendency is to force up p and p' .

If we return to the case where consumption expenditure was reduced, we have to modify the formula in which b appears by introducing n and p' . That is to say, we are now assuming that consumers have started by reducing their consumption expenditure by b' , and that the consequent increase in "investment" (i.e. savings) has led to an increase ¹ in capital outlay from PN to $(P + p')(N + n)$

$$\begin{aligned} b &= b' + k(Pa + pA - pa - Pn - p'N - p'n) \\ b &= Pa + pA - pa. \end{aligned}$$

Therefore

$$b = \frac{b' - k(Pn + p'N + p'n)}{1-k}$$

¹ Or a decrease; p' and n may be negative.

$$\begin{aligned}
 Pn + p'N + p'n &= \frac{b' - (1 - k)b}{k} \\
 &= \frac{b' - (1 - k)(Pa + pA - pa)}{k}.
 \end{aligned}$$

Thus we see that the effect of decisions, either by consumers to vary their consumption expenditure, or by entrepreneurs to vary capital outlay, is in general to vary all the terms in the consumers' income so that it becomes

$$(P + p)(A + a) + (P + p')(N + n)$$

and to change the consumption expenditure from PA to $PA + b$. (a , n , p , p' and b may of course be negative).

The result is to cause a decrease or increase of stocks of goods at the rate of

$$b - Pa - pA - pa.$$

$$\text{Earnings (E)} \quad = P(A + a) + P(N + n).$$

$$\text{Expenditure on consumption (Mr. Keynes's } PR)^1$$

$$= PA + b.$$

$$\text{Savings (S)} \quad = E - (PA + b)$$

$$= P(N + n) + Pa - b.$$

$$\text{Windfall profit (Q)} = p(A + a) + p'(N + n).$$

$$\begin{aligned} \text{Investment (I)} &= (P + p)(A + a) + (P + p')(N + n) \\ &- (PA + b) = (P + p')(N + n) - b + Pa + pA + pa. \end{aligned}$$

The condition of provisional equilibrium is that the increase or decrease of stocks, $b - Pa - pA - pa$, should be equal to zero.

Equilibrium is only provisional, but there will be two tendencies at work leading from provisional to definitive equilibrium. First the existence of a windfall gain (or loss) will be causing a further increase (or decrease) of output. And secondly the increase (or decrease) of output will tend to cause an increase (or decrease) of wages and so of costs.

¹ What I have called P is Mr. Keynes's W_1 . His P is approximately my $P + p$, and his P' my $P + p'$.

In the case of a windfall gain output can only be increased up to capacity, and thereafter the first tendency ceases to operate. Equilibrium will be reached (if at all) through a rise of wages.

In the case of a windfall loss, there is no specific limit to the reduction of output. So long as there is a windfall loss, the less profitable concerns will be dropping out, or wholly or partly closing down, and new enterprises will not suffice to replace them. Equilibrium here requires a fall of wages, and unemployment supplies the motive for the fall.

Provisional equilibrium means merely that the increase or decrease of goods in stock has ceased. When it occurs, investment is equal to capital outlay. If the condition were satisfied from the beginning, there would be no "virtual" rise or fall of prices. Even so, however, there would presumably be a decline of output concurrently with the fall of prices. Mr. Keynes often seems to assume that the decline of output (with consequent unemployment) occurs *only* as the result of a windfall loss, and the windfall loss of course is merely one aspect of the fall of prices. If initially there is no decline of output or accumulation of unsold goods, then $a = 0$, and $b = pA$.

$$\begin{aligned}\text{Savings} &= P(N - n) + b = P(N - n) + pA. \\ \text{Investment} &= (P - p')(N - n).\end{aligned}$$

The only source of disturbance remaining is the windfall loss, $pA + p'(N - n)$, which is, by definition, the difference between savings and investment.

Mr. Keynes, in expounding his fundamental equations, tacitly assumes that the whole effect of any increase in demand for consumption goods must appear immediately in price. That is to say, he is making this assumption that $a = 0$, and $b = pA$.

"If entrepreneurs," he says, "choose to spend a portion of their profits on consumption . . . the effect is to increase the profit on the sale of liquid consumption goods by an amount exactly equal to the amount of profits which have thus been expended. . . . Thus, however much of

their profits entrepreneurs spend on consumption, the increment of wealth belonging to entrepreneurs remains the same as before" (p. 139).

If $b = pA$, then any additional sum spent by entrepreneurs on consumption simply raises p and therefore swells the windfall profit, $pA + p'N$. But in general that condition will not be fulfilled. Even when a windfall profit has already developed (as Mr. Keynes is assuming), it does not follow that producers will be employed up to capacity. And indeed Mr. Keynes's general position, that an *actual* rise or fall of price (without which there is no excess or deficiency of investment) precedes an increase or decrease of productive activity, implies that there will at some stage be a windfall profit without the corresponding increase in activity.

So long as producers are not employed up to capacity, additional demand will be met, in part at least, by increased production. That is to say, a will not be zero. And in general additional demand will be met in part from stocks, so that b will not be equal to pA .

As his argument develops, Mr. Keynes frequently makes either expressly or tacitly the assumption that a change in demand must take effect wholly in a change in price. If that condition were fulfilled, the difference between investment and capital outlay would be eliminated, and the difference between savings and investment would survive as the criterion of disequilibrium.

Though the latter criterion has to be supplemented in the more general case by the former, it is not to be inferred that the two together supply a complete solution of the problem of monetary equilibrium. In fact, prices might be fixed and stocks continue unchanged, yet *output* might vary. There is no reason in the nature of things why we should not have $p = p' = 0$ and $b = Pa$, while a and n have definite values. In that case there is a change in the consumers' income from $P(A + N)$ to $P(A + a + N + n)$.

The change in output may be a move towards equilibrium. Indeed the presumption is that any *increase* in

output is a move towards equilibrium, till activity reaches a stage at which it imposes a greater strain (from overtime, etc.) than can be permanently endured. If we leave out of account this production "above capacity," we may say that any *under-employment* of productive resources is a form of disequilibrium. Since there may be assumed always to be surplus capacity of plant, the test of this disequilibrium is the existence of unemployed labour. That will usually occur as the result of a shrinkage of demand which also causes an accumulation of stocks and a fall of prices. But theoretically it might occur without them, and in that case savings would be equal to investment and investment would be equal to capital outlay, and yet there would not be equilibrium. An unchanged price level is by no means a far-fetched hypothesis. The notorious rigidity of retail prices has been referred to above, though it is of course unlikely that the prices of finished capital goods would be equally rigid.¹ That there should be no accumulation of unsold goods is less plausible. It might be true of manufactured products of which the output can be quickly damped down. But, with no outlet through a reduction of prices, natural products, of which the supply can only be regulated from season to season, would be bound to accumulate.

Nevertheless it may well be that the fall of prices and the accumulation of unsold goods are kept within relatively narrow limits, and, if so, unemployment will be all the more severe. The extent of the disequilibrium cannot be adequately assessed without giving *independent* weight to unemployment.

We have in fact three separate symptoms of disequilibrium: (1) the disparity between prices and costs, (2) the accumulation of unsold goods, (3) unemployment. Each tends to be transformed into the others, and an intensification of any of them will relieve one or both of the others.

¹ To eliminate the difference between investment and saving, it is enough to suppose that there is a reduction of wages in proportion to such reduction of prices as does occur.

The fault of Mr. Keynes's definitions is that they concentrate too much on the first. And it is particularly unfortunate that he has introduced his concept of "savings," which in reality plays no other part in his analysis than to disguise the disparity between prices and costs under the expression "the difference between savings and investment."

All that Mr. Keynes says in regard to the "decisions" determining the difference between savings and investment really applies to the difference between investment and capital outlay. Deplorable confusion is bound to result, and indeed has resulted.

VIII. INVESTMENT UNDER A BARTER ECONOMY.

Has it been one of Mr. Keynes's aims to devise a non-monetary theory of money? Savings and investment, consumption and non-available output are non-monetary concepts. So are changes in *relative* prices, and changes in prices relative to wages or costs. An explanation of monetary phenomena in terms of non-monetary concepts would be quite in the tradition of the Cambridge school of economists.

I do not think that this interpretation of Mr. Keynes's *Treatise* can be sustained. Nevertheless it will not be without interest to enquire just how far it can be pressed.

The hypothesis of a barter economy is always rather unsatisfactory. Since it is anyhow incapable of practical working, we have either to disregard friction altogether or to make rather arbitrary assumptions in regard to it.

Let us assume a community which has no currency and, no money of account. Credit instruments and investments entitle their holders to receive interest and principal in *goods*, which they can barter for the goods they need.

We may imagine that the bartering of goods for goods and of goods for securities is carried out through a group of intermediaries or dealers. A producer will barter his output with a dealer for the goods and securities that he needs for himself and also for the remuneration of those whom he employs. When he needs capital, he will obtain it in exchange for securities created by himself.

The dealers will be obtaining securities partly from producers who are extending the working capital or fixed capital of going concerns, and partly from those who are promoting and equipping new enterprises. They will be distributing the securities to those individuals throughout the community who want to save, and therefore to receive securities instead of goods as part of their incomes.

The dealers in securities must be also dealers *in goods*. For they can only sell securities for goods, and they must buy securities from the promoters with capital goods, which they will acquire from the producers of capital goods in exchange for other goods.

They will have to equalise the demand for securities with the supply. They will do so by adjusting the rate of interest. If they make a mistake, the result will be a difference between unconsumed income and capital output. If the rate of interest is put too high, there will be an excess of unconsumed income. The dealers will part with more securities than they receive, and they will receive more goods than they part with. They will receive an increment of stocks of goods in exchange for securities. Similarly, when the rate of interest is too low, an excess of capital output will result in a decrement of their stocks of goods and an increase of their securities.

It need not be assumed that items of fixed capital enter into the stocks. For the most part the fixed capital will be constructed to order, and so will not become surplus. Pieces of equipment or plant may be included in the surplus stocks, but the stocks are likely to be composed mainly of consumable commodities available for use as income.

Consider the case where the rate of interest is too high. What will the dealers do when they find themselves encumbered with surplus goods? In a money economy the trader in that position will sometimes sell off the goods at a sacrifice. And it would be possible, if excessive stocks were held of some products and deficient stocks of others, to offer some of the former in exchange for some of the latter on favourable terms. But where the stock of all products is on the whole redundant, this is no remedy.

What the dealers in securities want is to get rid of goods in exchange for securities. They will therefore offer more goods. They will offer more *present* goods in exchange for a given amount of *future* goods. In other words, they will lower the rate of interest.

We have assumed that the creation of securities has been checked by too high a rate of interest. Capital output will thereby have been retarded. The producers of capital goods will make a sacrifice of value and will accept less of other goods in exchange for their products.

The fall in the rate of interest and the reduction in the value of capital goods relative to other goods will both tend to stimulate the promotion of capital enterprises, and so to increase the supply of securities. Thus and thus only can equilibrium be restored.

If the promoters of capital enterprises were very reluctant, the rate of interest might eventually become negative. There would be different rates of interest for different commodities, those which are durable and easily stored commanding a rate not much below zero, while those which are perishable or costly to store would pass at a value depressed by the anticipated expense of holding them.¹

Now consider the same situation under a monetary economy. The dealers in securities can specialise; they need not also be dealers in commodities. If they sell more securities than they buy, they receive more money than they pay. They absorb cash, either increasing their balances or, as is more probable, paying off bank advances.

The money they receive is diverted from the markets for goods. That occurs through the diminution of the incomes of the producers of capital goods. The sales of consumption goods fall off, and there follow the consequences already described, an accumulation of unsold goods, a reduction of output and a reduction of prices.

The essential difference is that in the barter economy the failure of dealers to sell securities itself constitutes a demand for *goods*, so that the demand for goods remains

¹ As to rates of interest in a non-monetary economic system see an article by Mr. P. Sraffa in the *Economic Journal* for March, 1932 (pp. 49-52).

undiminished. In the monetary economy it results in the absorption of cash, and a reduction of the demand for goods. No alternative assumption as to the working of the barter economy would alter this. If there were no dealers in securities, the promoters would part with securities in exchange for goods. If the people who save could not get securities in excess of those created by promoters, they themselves would be compelled to accumulate goods.

Thus under a barter economy any shortage of capital output must be made up by an accumulation of goods, and does not cause a shortage of "investment."

There is, it is true, a fall in the relative value of capital goods, and a consequent "windfall loss" to the producers of capital goods. But this is merely what must be suffered by the producers of *any* class of goods for which the demand declines. And the relative cheapness of capital goods brings a windfall *gain* to other producers who receive as part of their incomes securities representing the enterprises which are made more valuable by getting cheap equipment.

It cannot be taken as proved that on balance no windfall loss will result. In so far as wage earners are remunerated with securities, and gain at the expense of the producers of capital goods, a windfall loss will occur.

But it is only through a monetary economy that the reduction of income initially inflicted upon those concerned in the production of capital goods, spreads through shrinking demand to those concerned in the production of consumption goods.

The *ulterior effects* upon productive activity, which make changes in capital output important, depend entirely upon the use of money. Capital output enters into the problem of monetary equilibrium only because it is through stimulating or checking capital output that the banking system performs its essential function of enlarging or compressing the consumers' income and outlay.

With this conclusion I do not think Mr. Keynes would disagree. When he says, "We shall be misled if we lay much stress on the total quantity of money, when we

are trying to trace the causation and the stages of a transition" (vol. i., p. 219), he does not intend to deny the importance of the *flow* of money as distinct from the *quantity*.

"The order of events," he continues, "is *not* that a change of Bank rate affects the price level because, in order to make the new Bank rate effective the quantity of money has to be altered. It is rather the other way round. A change in the quantity of money affects the price level in the first instance, because, other things being equal, this means a Bank rate which will change the market-rate of interest relatively to the natural rate."

It is *essential* to his theory that the departure of the market-rate of interest from the natural rate, by which the amount of investment is modified, causes at the same time an alteration in the flow of money, that is to say in consumers' income and outlay.

Mr. Keynes attributes to me (rather tentatively, it is true) acceptance of the view of "Bank rate as acting directly on the quantity of bank credit and so on prices in accordance with the Quantity Equation" (vol. i., p. 188). But the passage which he quotes from my *Currency and Credit* contains no reference, explicit or implicit, to the quantity equation. Possibly I have misled him by using the expression "contraction of credit" for what I have sometimes called more accurately a "retardation of the creation of credit."

The doctrine that I have consistently adhered to, that an acceleration or retardation of the creation of credit acts through changes in consumers' income and outlay on the price level and on productive activity, and not through changes in the unspent margin, is, I think, very close to Mr. Keynes's theory.

IX. CAPITAL OUTLAY AND CREDIT REGULATION.

The principal theme of the *Treatise* is the manner in which the decisions in regard to consumption expenditure and in regard to non-available output are influenced by the banking system, and the consequences which follow.

The former decisions are of much less importance in monetary theory than the latter. "When there is a disequilibrium between savings and investment, this is much more often due to fluctuations in the rate of investment than to sudden changes in the rate of savings, which is, in normal circumstances, of a fairly steady character" (vol. ii., p. 93). "A disturbance will seldom or never be initiated by a sudden change in the proportion of current income which is being saved" (vol. i., p. 280).

We are led therefore to concentrate our attention on the manner in which the banking system influences the decisions regarding non-available output or capital outlay.

"In order that producers may be able, as well as willing, . . . to increase their non-available output, they must be able to get command of an appropriate quantity of money and of capital resources; and in order that they may be willing, as well as able, to do this, the rate of interest which command over such resources costs must not be so high as to deter them" (vol. i., p. 182).

If the banking system stimulates capital outlay, the result will be additional output, or output at higher prices, or both. Consumers' income is increased from $PA + PN$ to $PA + (P + p')(N + n)$. The additional income must be *paid*. The producers have to procure the money with which to pay. Some may have surplus balances and be in a position to release cash from them, but in general the release of cash will involve some at any rate of the producers in borrowing from the banks, and it is through this necessity that the banks are enabled to exert their influence.

As we saw above, when consumers' income is enlarged, there will be a consequential increase in the expenditure on consumption. It is increased from PA to $PA + b$, stocks of consumption goods are drawn upon, and there results an increase in the value and volume of available output.

The increased sales will restore cash to the traders, and enable them to repay bank advances to the value, more or less, of the reduction of their stocks. At the same

time the increase in available output will necessitate an increase in working capital, and that will form a further addition to the non-available output. In fact the first effect of the efforts of producers to meet the increased demand for consumption goods will be wholly felt in an increase of working capital. It is only after an interval (which may, however, be very short, see below, pp 390 and 398-9) that any additional output of finished consumption goods will appear.

Thus the original increase in the consumers' income causes a further increase, which in turn reacts with cumulative effect. As production approaches capacity, the effect is concentrated on prices, and the vicious circle of inflation sets in. Similarly, when the banking system checks capital outlay, the compression of consumers' income will give rise to decreasing output and falling prices, and the vicious circle of deflation.

In the regulation of credit the starting process is of vital importance. Enlargement or compression of the consumers' income, once initiated, tends to proceed by its own momentum. Enlargement is felt in an expansion of demand, which stimulates further output and further borrowing and enlarges the consumers' income still more. Compression is felt in a contraction of demand, which damps down output, discourages borrowing and causes still greater compression.

Mr. Keynes does not believe that "the volume of investment either in working capital or in liquid capital is sensitive to changes in the short-term rate of interest by itself, and unless these changes create an expectation of changes in prices" (vol. ii., p. 363). "Such effects as can be produced directly on the willingness to invest in working and liquid capital are attributable," he thinks, "rather to the greater or less degree in which the fringe of 'unsatisfied' borrowers . . . is satisfied than to the cheapness or dearness of money itself" (vol. ii., p. 364). On the other hand, he holds that "almost the whole of the fixed capital of the world is represented by buildings, transport and public utilities; and the sensitiveness of these

activities even to small changes in the long-term rate of interest, though with an appreciable time lag, is surely considerable" (vol. ii., p. 364).

Accordingly he looks for the response of productive activity to the short-term rate of interest in the effect first on the long-term rate of interest and then on the production of fixed capital.

Here is another matter in regard to which I find myself differing from Mr. Keynes. In my opinion, the traders who hold stocks of finished goods with borrowed money are likely to be especially sensitive to the rate of interest, and their response is likely to play a decisive part in the *initiation* of an expansion or contraction of credit. I do not dispute either that they may be still more sensitive to "an expectation of changes in prices" or that the "fringe of unsatisfied borrowers," who would borrow with relatively little regard to the rate of interest if the banks would consent to lend to them at all, contribute to the result. But the expectation of changes in prices only occurs *after* the state of demand has been affected, and is not (except quite fortuitously) a part of the originating cause. And the action of the banks in granting or refusing accommodation to the fringe of unsatisfied borrowers is likely to depend on the control of the central bank over credit in substantially the same way as the market-rate of short-term interest itself.

X. CREDIT REGULATION—LIQUID CAPITAL AND WORKING CAPITAL.

Mr. Keynes seeks to meet my argument as to the sensitiveness to the rate of interest of dealers who hold stocks of goods with borrowed money by quoting Tooke's "classical refutation" of this theory (vol. i., pp. 193-6). But the passage quoted from Tooke applies to "persons who, upon imperfect information and upon insufficient grounds, or with too sanguine a view of contingencies in their favour, speculate improvidently." Of these he says: "It is not the mere facility of borrowing or the difference between being

able to discount at 3 or at 6 per cent. that supplies the *motive* for purchasing or even for selling. Few persons of the description here mentioned ever speculate but upon the confident expectation of an advance of price of at least 10 per cent."

This quotation from Tooke is entirely beside the point. My argument relates not to speculators¹ (especially not to ignorant and improvident speculators) but to regular dealers or merchants. And as to these there is evidence, in the following passage, that Tooke's view of the effects of a rise in the rate of interest did not differ very widely from that which I have advocated. In volume v. of his *History of Prices* (p. 584), he wrote :—

"Inasmuch as a higher than ordinary rate of interest supposes a contraction of credit, such goods as are held by means of a large proportion of borrowed capital may be forced for sale by a difficulty in obtaining banking accommodation, the measure of which difficulty is in the rate of discount and perhaps in the insufficiency of the security. In this view, and in this view only, a rate of interest higher than ordinary may be said to have an influence in depressing prices."

Tooke here concentrates on the effect of a high rate of interest in hastening sales. I should lay more emphasis on its effect in delaying purchases. But at any rate he clearly recognises the susceptibility to credit conditions of the regular commercial dealers in commodities.

Of the narrowness of their margins we have statistical proof. The following statistics, compiled by the Harvard Bureau of Business Research, are quoted in Professor M. T. Copeland's *Principles of Merchandising* (see p. 368).

British and American income tax statistics show a somewhat higher percentage of net profit to turnover (more like 2 or 3 per cent.). Possibly this is due to the inclusion of speculative gains obtained by a different type of business from those here referred to.

¹ Mr. Keynes himself, on the other hand, does think that speculators are influenced by the cost of borrowing, not only speculators in securities (vol. i., p. 251, and vol. ii., p. 361) but speculators in commodities (vol. i., pp. 266-7).

	Percentage of Turnover.		
	Gross Profit.	Net Profit.	Interest Paid.
Wholesale Grocery :			
Sales less than \$500,000 . . .	11·4	0·4	1·7
Sales \$500,000 to \$1,000,000 . .	11·5	0·5	1·7
Sales \$1,000,000 to \$2,000,000 .	11·7	0·6	1·7
Sales \$2,000,000 and over . . .	12·1	0·6	1·5
Wholesale Drug Business :			
Under \$1,000,000 . . .	17·2	0·7	2·4
Over \$1,000,000 . . .	17·2	1·1	1·9
Wholesale Dry Goods . . .	17·6	1·0	2·8
Wholesale Automotive Equipment	24·9	1·5	2·0

It seems obvious that dealers who are making a net profit of from $\frac{1}{2}$ to $1\frac{1}{2}$ per cent. on their turnover, and whose interest charges amount to from $1\frac{1}{2}$ to $2\frac{3}{4}$ per cent. of turnover, would be sensitive to any considerable movement in the rate of interest.

Mr. Keynes examines (vol. ii., pp. 135-8) the "heavy cost of carrying" stocks of commodities, "of which," he says "fluctuations in the interest charges . . . are perhaps the least important."

"In the case of commodities which are suitable for storage," he states that deterioration, warehouse and insurance charges and interest "seldom cost altogether less than 6 per cent. per annum, and 10 per cent. per annum may be regarded as a normal figure" (vol. ii., p. 136).

These percentages *include* interest. Mr. Keynes does not say what rate of interest he has assumed, but, if it be 5 per cent., I should judge from such facts as I am acquainted with that his estimates are not far from the truth. For some goods, such as the non-ferrous metals, which occupy little space in proportion to value, the cost in addition to interest is almost negligible. For very bulky goods the cost may considerably exceed interest. This particularly applies to cereals. For example, £1000 worth of wheat occupies more than eighty times as much space as £1000 worth of copper. As a rule fairly compact manufactured goods would be cheap to store. Very few would be worth

so little for a given volume as wheat (about £4 per cubic yard at present prices), and some would be worth more than copper.

Mr. Keynes takes for granted that it is particularly "certain staple raw materials" which are sufficiently free from risk of deterioration to be suitable for storage. But there is a very wide range of finished products for which the risk of deterioration over a period of a few weeks is negligible. Even of clothes quite a restricted proportion is subject to rapid changes of fashion. This is still more true of furniture and ornaments. Far the greater part of objects of utility, such as household requisites or office requisites, are not subject to deterioration over a short period. Obsolescence does not come suddenly, and for most articles it is a remote risk. Groceries are for the most part capable of storage for a moderate period at negligible cost.

Professor Copeland analyses the expenses of wholesale grocery business according to the number of times per annum the stock is turned over (ratio of annual purchases of goods to average stocks):—

Stock-turn per Annum.	Interest per cent. of Sales.	Other Expenses per cent. of Sales.	Total Expenses per cent. of Sales.	Profit per cent. of Sales.
Under 4·5 .	2·1	10·1	12·2	0·1
4·5 to 6·9 .	1·7	9·5	11·2	0·5
7·0 and over .	1·2	8·9	10·1	1·0

It is perhaps a coincidence, but still significant, that interest *plus* profit is exactly the same percentage of sales (2·2 per cent.) in each case. The greater part of the "other expenses" is composed of (a) sales force, (b) receiving and shipping, (c) buying and management. Insurance is only 0·2 per cent. and warehousing charges are not shown separately at all.

It is true that a trifling reduction in dealers' buying prices for goods would offset any extra charge that a high rate of interest would place upon them. But in practice

the way dealers start to lower their buying prices is by restricting their purchases. And the same situation which leads them to delay purchases leads them to accelerate sales, so that the wholesale selling price tends to fall as fast as the wholesale buying price.

On the other hand, where bank advances are required for working capital, i.e. for the expenses of manufacture and transport, the corresponding assets cannot be increased or decreased at will by purchase or sale in the market. The actual accrued expenses of manufacture at any time are dictated by the conditions of the business and the amount of goods in course of production. The only parts of the working capital that can easily be varied are the stocks, on the one hand, of materials and intermediate products, and on the other, of the manufacturer's completed product. So far as these stocks are concerned, the manufacturer is really discharging the functions of a merchant and shows a merchant's sensitiveness to credit conditions. But as to the rest of his working capital he is almost entirely insensitive; the greater or less charges for bank advances are of no moment in comparison with the paramount need to keep his works employed. If he can get sufficient orders to do so, he will not refuse them on account of interest charges.

When he cannot get sufficient orders (or effect sufficient sales to the consumer), he has the alternative of manufacturing for stock. And here the terms for bank advances will become a serious factor in his calculations. At that stage, however, other considerations enter in. The shortage of orders or of sales is itself a symptom threatening a fall of price. The banker when he charges more for advances is also probably less willing to lend. Altogether manufacturing for stock is not a very attractive expedient at a time of flagging demand.

In respect of their response to credit conditions, working capital and liquid capital must be taken together. If dealers are led by the prospect of easy credit to add to their stocks of goods, the first effect is felt in their increased orders to the producers. It is by increased activ-

ity on the producers' part that the dealers look to procure the additional goods. Consequently the dealers' sensitiveness to credit results at first in an increased demand for credit not by the dealers themselves but by the producers. At that stage it is not liquid capital that increases, but working capital. The same is true of a credit restriction, with this difference that the fall in the amount of working capital does not begin till producers have worked through existing orders. The relation between changes in liquid capital and changes in working capital is a subject to which I shall return later on (see below, pp. 389-91 and 394-9).

XI. SAVINGS-DEPOSITS.

Mr. Keynes divides balances or deposits into three classes, Income-deposits, Business-deposits and Savings-deposits. The income-deposits are "replenished by individuals out of their personal incomes and employed by them to meet their personal expenditure and their personal savings" (i., p. 35). Business-deposits represent the difference between the receipts and outgoings of "a business man, a manufacturer or a speculator." These two, income-deposits and business-deposits, Mr. Keynes classes together as cash-deposits.

"But," he says, "a bank-deposit may also be held not for the purpose of making payments, but as a form of savings" (p. 36).

Savings-deposits are those of which the velocity of circulation is zero ¹ (ii., p. 23). He distinguishes the following cases. The holder (1) "may be attracted by the rate of interest;" (2) "may anticipate that other investments are likely to depreciate in money value;" (3) may want his savings always to be convertible into cash at a fixed money value; (4) may accumulate small increments of savings with a view to investment in a lump; (5) "may be awaiting an opportunity of employing them

¹ This of course cannot be literally true. Some payments must be made into and out of savings-deposits.

in his own business" (i., p. 36). But these are not exhaustive.

For the purposes of analysis Mr. Keynes divides the possible cases of savings-deposits into two groups, (a) where the holders "permanently prefer to hold savings-deposits in preference to securities, and (b) where they would normally be holders of securities, but prefer for the time being to hold liquid claims on cash" (i., p. 250).

Savings-deposits of the former kind are "likely to change slowly," and "any rapid change in the total of savings-deposits is apt to indicate that there is a change in the second category."

When a man has decided to save money, he still has a further decision to make. He can choose to hold it in the form of bank-deposits or of "securities" (i., p. 141). Securities are *all* forms of loan or real capital other than bank-deposits. Besides securities in the usual sense, they include capital assets not represented by any marketable stocks, shares, bonds, etc. (see also i., pp. 248-9).

When savings are being diverted from securities to deposits, the effect is to lower the prices of securities. But it is in the power of the banking system, either to counteract this tendency "by buying the securities which the public is *less* anxious to hold and creating against them the additional savings-deposits which the public is *more* anxious to hold" (i., p. 142), or to restrict the increase in deposits, with the result of forcing down the prices of securities to the level at which people will be induced to buy them in preference to holding savings-deposits.

Mr. Keynes builds a great deal on this power of the banking system. He regards it as determining the prices of securities, of "investments," of "investment-goods" (i., pp. 142-5). "Given the volume of savings-deposits created by the banking system, the price level of investment-goods (whether new or old) is solely determined by the disposition of the public towards hoarding money" (p. 144).

When he comes to the *modus operandi* of Bank rate, he explains the relation between the prices of securities

and the prices of capital-goods. The demand price of capital-goods depends on the rate of interest at which their future yield is capitalised¹ (p. 202).

High prices of securities (or a low rate of long-term interest) will mean high demand prices for capital-goods, and will stimulate the production of capital-goods. That is to say, promoters will be induced to start new capital enterprises, and will give orders to the producers of capital-goods accordingly.

Mr. Keynes is inclined to emphasise the influence of the short-term rate of interest on the long-term rate. The power of the banks over the volume of savings-deposits is one aspect of this influence, since for the purpose of modifying the volume of savings-deposits they rely not only on the purchase and sale of securities on their own account, but also on the rate of interest they pay on time deposits. And there are also the advances to various classes of people who buy and hold securities with borrowed money.

It is here that we find the foundation of Mr. Keynes's theory of the regulation of investment. Since he does not believe investment in working capital or in liquid capital to be sensitive to the short-term rate of interest, control must work mainly through investment in fixed capital, or "securities." The price level of securities, which from one point of view is the price level of investment-goods and from another is the reciprocal of the long-term rate of interest, is determined by an equilibrium between the desire to hold savings-deposits and the desire to hold securities. When the people who save decide how much of their savings they will leave on deposit and how much they will place in securities, the new capital issues must accommodate themselves to the latter portion. If they fail to do so, the supply of securities falls short of the demand, the prices of securities rise, and equilibrium is reached through people

¹ This formula is open to criticism. It does not take sufficient account of the distinction between the price paid by the promoter for plant and the price paid to the promoter for shares. Mr. Keynes himself is not satisfied with it (*Economic Journal*, September, 1931, p. 422).

putting more of their savings into deposits and less into securities. Thus the volume of new investment is exactly governed by the proportion of savings placed in securities.

It would seem to follow that it is the portion placed on deposit (or withdrawn from deposit) that is responsible for the disharmony between the decisions as to saving and investment. Mr. Keynes has, however, insisted (in a controversy with Mr. D. H. Robertson, *Economic Journal*, September 1931, p. 416) that "the volume of inactive deposits has no particular relation to an excess of saving."

His point is that if there *is* an excess of saving over investment, the "entrepreneurs as a whole must be making losses exactly equal to the difference" (i., p. 145), and the excess savings (if, as he is for the moment assuming, they are not added to savings-deposits) will be used up in buying the capital assets or securities sold to make good these losses. Thus the excess savings will find a supply of securities without evoking any new investment.

But in reality Mr. Keynes's definition of savings makes nonsense of the whole controversy. For the excess savings *are* the losses made by the entrepreneurs and have no other existence whatever. At the outset, when the effect has been felt in a decline in the demand for consumption goods, but no fall of prices has occurred, there are no excess savings. The moment comes at which prices are cut and the sellers of goods suffer a loss. Every seller is then deemed to be saving a sum equal to the loss he suffers, and these are the *only* excess savings. All other savings are covered by an equal amount of investment in the form either of capital outlay or of unsold goods. Thus the question of what is done with the excess savings does not arise.

To find an excess in the form of a sum of money seeking a resting-place, we must go back to the stage at which people decide to spend less on consumption, and have a surplus of unconsumed income at their disposal.

Mr. Robertson's argument was that, in so far as this surplus is not added to inactive deposits, but is applied to buying securities, it will be spent on new capital goods, and will *not* be excess savings. There will be no diminu-

tion of demand for goods on the whole, but only a transfer of demand from consumption goods to capital goods. Consequently there will on balance be no fall of prices and no windfall loss.

If we discard Mr. Keynes's definitions and take savings to mean unconsumed income, and investment to mean capital outlay, the controversy becomes intelligible.

Suppose the expenditure on consumption goods to be diminished by b , and the purchases of securities to be increased by c . Then, if capital outlay is likewise increased by c , the difference between unconsumed income and capital outlay is $b - c$, and is equal to the sum added to savings-deposits.

It may be objected that the increase in capital outlay might not be exactly equal to the increase in the securities purchased. But according to Mr. Keynes's theory of savings-deposits, there would result a rise in the prices of securities which would divert money from securities to savings-deposits to an extent just sufficient to reduce the money placed in securities to the amount of capital outlay.

The gross receipts of entrepreneurs would be diminished by $b - c$. That does not mean that they would suffer a windfall loss to that amount. The windfall loss would be limited to so much of the reduction in receipts as was due to a fall of prices. But the whole shortage of cash receipts, whether due to a fall of prices or to a reduction in the quantity sold, would have to be made good.

It does not follow, however, that the entrepreneurs would restore their cash by selling securities or capital assets. They might obtain additional bank advances.

Mr. Keynes qualifies his theory of savings-deposits by taking into account those people who hold securities with borrowed money. There may be the case "where 'two opinions' develop between different schools of the public, the one favouring bank-deposits more than before and the other favouring securities. In this case the result depends on the willingness of the banking system to act as an intermediary between the two by creating bank-deposits,

not against securities, but against liquid short-term advances" (vol. i., p. 143). The two groups are distinguished as the "bears," who prefer at the moment to avoid securities and lend cash, and the "bulls," who prefer to hold securities and borrow cash (i., p. 250). In the contingency of a bullish sentiment arising, "if one section is tempted by easy credit to borrow for the purpose of buying securities speculatively, security prices can be raised to a level at which another section of the public will prefer savings-deposits" (i., p. 251).

Mr. Keynes seems to regard a fluctuation in the amount of money borrowed by the holders of securities as no more than an occasional disturbing factor in the equilibrium between savings-deposits and securities. Personally I should be inclined to attribute a more important part to the fluctuations in the amount borrowed than to the fluctuations in savings-deposits. I should say that it is rare for the private investor to hold up cash merely because he cannot find any security that appears to him to be a favourable investment at the market price. And it is common for him to anticipate future savings by obtaining a bank advance to buy some security which he believes to be particularly promising. The principal effect of a general bear sentiment developing among investors is rather an extensive liquidation and reduction of these bank advances than an accumulation of idle money, though there is likely to be some accretion of balances in the hands of those who had depleted their cash resources to keep down the extent of their borrowing.

If we regard loans from banks for holding securities as negative savings-deposits, this question of the relative importance of positive and negative deposits becomes a matter of detail. Mr. Keynes, however, takes insufficient account of one class of borrower, the stock-jobber, whose special function it is to be the *residuary* buyer or seller of any security for which there is a deficiency or excess of demand from the public.

When the equilibrium between savings-deposits and the purchases of securities is disturbed, it is the stock-jobbers

who feel it first and who seek to correct it by altering quoted prices.

If we add together the savings placed in securities and the expenditure on consumption, we get something not very different from what I have called consumers' outlay. Consumers' outlay is what people spend out of income, whether on consumption or on the acquisition of capital assets. So much of their income as is not spent is of course added to balances, and does not differ very greatly from an addition to savings-deposits. Or alternatively consumers' outlay may exceed income if it is supplemented by a withdrawal from balances or by bank advances.

Savings-deposits however include a portion of traders' balances, disbursements from which are not to be reckoned as part of consumers' outlay but as a change of form of working capital. And there are other differences.¹

Mr. Keynes's concepts therefore cannot be exactly identified with consumers' outlay. Nevertheless I think that when he speaks of an increase or decrease of savings-deposits (a "bear" or "bull" position on the part of the public), he means substantially the same thing that I should call an absorption or release of cash by consumers.

At a time of depression there is *also* an absorption of cash by traders. But the savings-deposits in the hands of traders are predominantly composed of idle working capital withheld from the purchase of *commodities*, not of securities. Some of it may be temporarily invested in securities, but it would be inconsistent with the primary purpose of working capital to tie it up and risk loss on realisation when it is required for trade.

The effect of an increase of savings-deposits is to make the consumers' outlay for the time being less than the consumers' income. But it must not be forgotten that at a time of depression, when consumers' income is decreasing, people's cash requirements will be decreasing.

¹ When Mr. Keynes speaks of income he means "earnings," that is to say, consumers' income, *minus* windfall gains. Nevertheless savings-deposits would seem to include idle money accumulated out of windfall gains, as well as out of "earnings."

There is a tendency to "release cash" from income-deposits and from business-deposits, and the release of cash tends to counteract the effect of the absorption of cash in savings-deposits. In fact, at a time of depression, although a diminution of velocity of circulation is conspicuous in that the contraction of the consumers' income is not accompanied by a proportional contraction of deposits, yet there is usually *some* contraction of deposits. There may be an expansion of deposits for an interval of perhaps a few months, but it gives place to a more considerable contraction. When on balance there is a release of cash, the shrinkage of consumers' outlay is *less* than the shrinkage of consumers' income.

In connection with savings-deposits Mr. Keynes attributes a decisive effect on the investment market to the purchases of securities by the banks. Those purchases are, no doubt, sometimes large. But they occur at a time of depression when the banks find it difficult to encourage short-term borrowers, particularly when their reserves have been swollen either by imports of gold or by open market operations of the central bank. The investments of a bank are a balancing item, to make up the total of its earning assets at a time when the supply of bills and advances is not adequate. In practice this device is sometimes less effective than might be expected, because the sellers of the securities may use the proceeds of sale to pay off their own indebtedness to the banks. But presumably there will be a favourable effect on new issues.

In addition to theoretical arguments as to the responsiveness of the long-term rates of interest to changes in the short-term rate, Mr. Keynes relies on empirical evidence. He quotes statistical evidence of a correlation between the yield of fixed interest securities and short-term rates in England and the United States in recent years, and he suggests that roughly a rise or fall of 1 per cent. in Bank rate would be associated with one of $\frac{1}{4}$ per cent. in the yield of fixed interest securities.

He has here, I think, misinterpreted the statistics. For side by side with the influence of the short-term rate

of interest on the long-term rate, allowance ought to be made for fluctuations in the *natural rate*, which affect both the others. The natural rate is affected by "expectations as to the future course of prices" (i., p. 212). A tremendous rise of prices such as occurred in 1920 would force up the long-term and short-term rates together. The natural rate would also be affected by fluctuations in the volume of investible funds, and in the remunerativeness of the kind of plant and equipment made available in industry by technical progress. It would be quite impossible either to measure or to eliminate these variations in the natural rate of interest, and consequently the statistical evidence of the influence of the short-term rate on the long-term rate is valueless.

XII. SHORT-TERM RATE OF INTEREST—EFFECTS ON FIXED CAPITAL.

If movements in the short-term rate of interest affect the long-term rate, that is because the two are in competition at several points :—

(1) The professional dealers in the stock-market (stock-jobbers) are short-term borrowers ;

(2) Investors may either borrow in order to anticipate their savings of the near future, or place money on deposit at interest, when they think it advisable to delay investment ;

(3) Speculators carry stocks and shares with borrowed money ;

(4) Banks and other short-term lenders have the alternative of placing a part of their resources in long-term investment ;

(5) Trading and manufacturing concerns often have the choice of long-term borrowing in place of short-term for working capital, and to some extent of short-term in place of long-term for extensions and improvements of fixed capital. And when they hold marketable investments as a reserve, they have the choice of selling them or pledging them for bank advances.

All of these classes are likely to respond in some degree to changes in the short-term rate of interest, or at any rate to the associated changes in the willingness of bankers to lend. Perhaps the fifth class, the trading and manufacturing concerns, are likely to respond most directly, because they will be accustomed to make direct comparisons of alternative methods of financing. Speculators and investors will be the least sensitive, for they do not in general borrow to buy or hold securities except in the expectation of capital appreciation, and the charge for interest is small in comparison. Banks also will make a direct comparison of alternative forms of investment, but their action will be primarily influenced by the desire to maintain a suitable distribution of their assets among different kinds of investment.

The professional dealers or stock-jobbers on the other hand, are in quite a special position. It is through them that the investment market performs its essential function of equalising supply and demand. The supply of investments consists of the new issues of securities, while the demand consists of the net amount of money received from the investors and others who buy securities. Whenever the market is called upon to absorb new issues in excess of the funds received from investors, it suffers a net outflow of money and its indebtedness is increased. Whenever the new issues fall short of the funds received, the market's indebtedness is diminished. In the one case the market's holding of securities is increased, in the other diminished.

The main pre-occupation of the stock-jobbers is to keep their books even, and they seek to correct an increase in their holdings of securities by quoting lower prices, and a decrease by quoting higher prices. If owing to a rise in the short-term rate of interest people become less willing to hold securities, the stock-jobbers will feel the effect in smaller net sales of securities, and a consequent increase in their holdings and in their indebtedness. So long as the market is functioning freely, they do not refuse to buy the securities offered, and they accordingly mark down prices

till they find they have encouraged buyers and discouraged sellers sufficiently. (If the reduction of prices is taken by speculators as a ground for expecting further reduction, prices may become very unstable, but that is a complication which it is not necessary to examine at length.)

The market thus regains equilibrium by giving people a sufficient inducement to hold securities with borrowed money or to hold them in place of lending money. The inducement depends upon their recognition that the prices of securities are "below normal," and the equilibrium is liable to be upset by any revision of the general view as to what "normal" values are, and it must not be forgotten that the charges for commission on the purchase and sale of securities are sufficient over any short period to offset any but a very substantial gain or loss in interest.

Up to this stage there is *no* effect upon capital outlay. There has been merely a shuffling of assets and liabilities among the stock-jobbers, the banks and the public. Capital outlay can only be influenced through new capital issues.

Now the process of discouraging new issues by raising the rate of interest is a slow one. The flotation when actually made is the fruit of a long period of planning and negotiating. After a certain stage is reached, postponement (except for a short time, a matter of weeks) is likely to be a serious sacrifice.

Nor is a rise in the rate of interest likely to have a decisive effect on a promoter's plans. Every project for capital outlay includes some expectation of profit over and above the yield of interest. Such a project is intended to take advantage of an opportunity for creating or extending the goodwill of a business. The promoter sees a prospect of selling the output that he anticipates.

A higher rate of interest does not often result in the abandonment of such a project, for it is unlikely to encroach very seriously on the anticipated margin of profit. Undoubtedly a higher rate does tend to diminish capital outlay. But that is for the most part a relatively remote effect, depending on the disuse of those types of plant or labour-saving instruments of which the yield is no longer equal

to interest on their cost. Some concerns will be found which are improving and extending their plant, and which will regulate their capital outlay by nice calculations of the balance between the yield and cost of any given improvement, and they may be immediately sensitive to a change in the rate of interest. But they are, I think, exceptional.

It may be asked, then, how the investment market can possibly accomplish its task of equalising new issues with investible funds over a short period. I think the answer is to be found in the organisation of the market. As in the case of bank advances, here also "there is an unsatisfied fringe of would-be borrowers at the market rate, and the market is not an entirely free one" (vol. ii., p. 368). Issuing houses, in fact, can restrict new issues by other methods than a rise in the rate of interest. Some they may flatly refuse. Others they may accept at a high rate of commission and a low issue price, that is to say, an issue price which is low even in comparison with the low prices prevailing in the market. Neither the issuing houses themselves (if they take up any of the securities they issue at all) nor the underwriters are any more willing to be over-burdened with unsold securities than the stock-jobbers. It is when the market is thus over-burdened that resort is had to these Procrustean methods of curtailing new issues.

The result is that the volume of new issues tends to be adjusted to the amount of investible funds. The investment market refuses to take more new issues than its current receipts from investors will pay for.

New issues through the investment market do not cover the whole of capital outlay. A part is financed directly out of income (e.g. company reserves) and a part by sales of securities. In either case the net amount of investible funds coming into the investment market is diminished, so that the effect is just the same as if new issues had been employed.

In so far as the short-term rate of interest influences the amount of securities bought and sold by banks and traders, the investment market is enabled to adjust the amount of

new issues accordingly. But I should say that in general the first effect of a change in the short-term rate is to bring about the appropriate change in the prices of securities (and so in the long-term rate), so that any considerable change in the volume of purchases or sales is quickly counteracted. The market is thus prepared for an increase or decrease in new issues as the case may be, but the actual increase or decrease only materialises, as Mr. Keynes says "with an appreciable time lag."

Here is the contrast with the effect of a change in the rate of interest on bank advances required to carry stocks of commodities. A desire on the part of borrowers to reduce such advances is directly transmitted to producers in the form of diminished orders. But when anyone seeks to reduce his holding of securities, the immediate effect is felt not by the producers of capital goods, but first by the dealers in the investment market, and then by the promoters of capital enterprises.⁹ It is only when the promoters have responded by curtailing, withholding or postponing new issues, that the producers begin to experience any diminution of orders for capital goods at all.

The effect on consumption goods is transmitted more quickly to producers, because there is no such intervening cushion as is presented by the investment market to take the shock.

It will be seen that my difference from Mr. Keynes as to the influence of Bank rate on investment is not very wide. He does not dispute that there is some effect upon the holding of stocks of goods. I do not dispute that there is some effect upon the holding of securities, and through it upon the long-term rate of interest, the amount of new issues and the amount of capital outlay. I attach importance to the *early* response of the holders of stocks of goods. He says that the effect on capital outlay occurs "with an appreciable time lag."

The reason why I regard the time factor as so important, is that credit is *inherently unstable*. When once an expansion or contraction of the consumers' income and outlay has begun at all, it tends to gather impetus with cumulative

effect. Expanding demand encourages investment and contracting demand discourages it. The task of those who are responsible for regulating credit is that of *starting* the appropriate movement. They have to break a vicious circle. Once it is broken, they can leave the situation to develop without further interference. Therefore credit regulation depends not on the point in the credit system where the response is greatest, but on that where the response is promptest.

XIII. THE CREDIT CYCLE.

I come next to Mr. Keynes's treatment of the Credit Cycle. This is a subject to which I attach a high degree of importance, for I regard the Credit Cycle as having been the form in which the evils of monetary instability made themselves felt under the pre-war international gold standard.

In Chapter XVI. Mr. Keynes classifies the possible causes of a disequilibrium of purchasing power. Apart from changes due to "Industrial Factors," which do not require separate treatment, he distinguishes:—

I. Changes due to Monetary Factors, e.g. those affecting the supply of money or the velocity of circulation;

II. Changes due to Investment Factors, which take effect through a divergence of the market rate of interest from the "natural rate." (The natural rate of interest is that which just equalises investment and saving.)

Mr. Keynes expresses the opinion (vol. i., p. 261) that "what is usually discussed under the designation of the *Credit Cycle*" is that type of disturbance due to Investment Factors which originates from "a change in the natural rate occasioned by a change in the attractiveness of Investment or in that of Saving" (p. 260). The Credit Cycle is "the alternations of excess and defect in the cost of investment over the volume of saving and the accompanying see-saw in the Purchasing Power of Money due to these alternations" (p. 277).

The cycle may be supposed to start when "circumstances have come about which lead entrepreneurs to believe that certain new investments will be profitable; for example, a new technical discovery, such as steam or electricity or the internal-combustion engine, or a shortage of houses due to a growth of population, or more settled conditions in a country where previously the risks of normal development had been excessive, or a Capital Inflation due to psychological causes, or a reaction stimulated by cheap money from a previous period of under-investment, i.e. a previous slump" (pp. 282-3).

The circumstances "which lead entrepreneurs to believe that certain new investments will be profitable" may be classed among "Changes due to Investment Factors" as examples of "a change in the natural rate occasioned by a change in the attractiveness of Investment or in that of Saving," quoted above. But this can hardly be said of the "reaction stimulated by cheap money from a previous period of under-investment." That does not arise from a change in the *natural* rate, but belongs to another class of the Changes due to Investment Factors, "a change in the market rate resulting from altered conditions in the loan market due to a change in Monetary Factors."

In describing the progress of a credit cycle, Mr. Keynes distinguishes three types. There may be at the outset:—

- (i) a substitution of the production of capital goods for that of consumption goods, or
- (ii) an increase in the production of capital goods, or
- (iii) an increase in the production of consumption goods.

In the first type earnings may be unchanged, and as soon as the diminished output of consumption goods is felt "the Consumption Price-level will rise, unless there is a corresponding increase in the proportion of earnings saved." This will occur "after an interval of time equal in length to the process of production of the consumption goods" (p. 283) (a "production period").

In the second type, which "is the more usual," earnings will be increased, and the rise in the Consumption price

level occurs immediately. In the third type of cycle earnings and the price level likewise increase, but at the end of a production period the consumption goods coming on to the market will be increased in the same proportion as the earnings, "so that prices fall back again to their previous level."

But even if in the first instance there is no stimulus to the output of consumption goods, i.e. type (i) or (ii) arises without type (iii), there will necessarily be a "Secondary Phase" in which the increase in the prices of consumption goods will elicit an increased output. "The Secondary Phase brings with it the seeds of a reaction, which will germinate as soon as the increased supply of consumption goods is ready for the market. Thus, sooner or later, consumption goods will be coming on to the market which can no longer be sold at the previously ruling price; so that the downward price phase of the Cycle now commences" (p. 289).

Nevertheless, Mr. Keynes adds, "this downward price-movement, whilst obliterating in whole or in part the windfall profits which had been ruling previously, should not, taken by itself, involve entrepreneurs in an actual loss."

If a windfall loss occurs, it may be for a variety of reasons. Some producers will have miscalculated, and find that "they cannot cover their costs of production unless prices are such that entrepreneurs as a whole are making a windfall profit." They will cease production and so "investment in working capital" will be reduced. Bear investors may encroach on the supply of money for the Industrial circulation. The price level, P' , of investment goods may fall, "thus removing one of the stimuli to over-investment."

"Meanwhile on the monetary side the position will be changing." For under the influence of the high prices (profit inflation) a rise of wages (income inflation) will have occurred and "more and more money will be required for the support of the Industrial Circulation."

I cannot regard these explanations (apart from the last) as accounting adequately for a reaction of the price level below normal.

First consider the producers working at a loss, who cease production when prices fall to normal. Does this mean that there will then be more than the normal proportion of capital and labour unemployed? That would presuppose that the price level has already fallen *below* normal. If the price level merely drops to normal, the shutting down of the concerns producing at a loss will do no more than reduce earnings and output to normal.

Moreover, the dropping out of these concerns is likely to be a very gradual process. If it reduces investment in working capital, it only does so to the extent that earnings shrink in advance of output. The process may be spread over many years and can hardly contribute materially to the reaction.

Secondly, it is a mistake to suppose that a bear position is likely to appear among investors merely because business has become less lucrative. The bear position, the accumulation of idle money by intending investors, occurs when the investors form a less favourable opinion of the value of securities than the stock-jobbers. That difference of opinion may occur at any time, and is not specially characteristic of a time of transition from activity to depression.

The essential cause of the reaction is to be found, I think, in the need for "more and more money for the support of the Industrial Circulation." Indeed it is not possible to understand the progress of the cycle unless full account is taken of the associated credit movements.

According to Mr. Keynes, the cycle starts with some impulse leading to increased output of investment goods, the output of consumption goods being possibly diminished, but more probably maintained or even increased. Increased output means increased earnings, and therefore, a rise in the prices of consumption goods. Next the rise in prices will evoke an increased output of consumption goods which, when it becomes available after a production period, will reduce prices again to normal. And it is at that stage that the question of causes driving the price level *below* normal arises.

The whole analysis is concerned solely with the effect

of an *isolated impulse* altering the volume of investment. The assumption of an isolated impulse is an abstraction. Events such as those of which Mr. Keynes gives examples, "a new technical discovery, such as steam or electricity or the internal-combustion engine, or a shortage of houses due to a growth of population, or more settled conditions in a country where previously the risks of normal development had been excessive," do not cause a sudden or discontinuous change in the attractiveness of investment or the natural rate of interest. Some of them are prolonged over periods covering generations, and far exceeding the length of a credit cycle. They overlap with one another and with the tendency for the rate of interest to decline with the gradual growth of capital.

The investment market has no difficulty in dealing with such long-period changes, and discharging its essential function of equalising the sales of securities to investors with the purchase of new issues from promoters. There is therefore no reason to expect that a divergence of the market rate of interest from the natural rate will ever be caused by them.

It is well recognised that a big expansion of the production of capital goods is a characteristic feature of the active phase of the cycle. But it does not follow that such an expansion is an *originating cause* of activity. I should regard it rather as a consequence.

An expansion of the consumers' income is accompanied by a more than proportional expansion of the incomes derived from profits. That does not necessarily mean a windfall gain. The increase may be due merely to an increase of output and of dealings relative to overhead charges. But the bigger fluctuations are of course due to windfall gains or losses, that is to say, fluctuations of prices relative to costs. Now the principal source of savings (in the ordinary sense of excess of incomes over consumption expenditure) is to be found in the large and precarious incomes, of which profits (in the ordinary sense of traders' net gains) are much the most important class. When profits are swollen by windfall gains, a very great part

of the addition is likely to be saved, and when profits are diminished by windfall losses, a very great part of the diminution is likely to come out of savings. When Mr. Keynes treats windfall gains and losses as capital items to be excluded from income altogether, he is, I think, taking much the same view as this.

A rise of prices relative to costs brings, in the form of windfall gains, an increase in investible funds, and if the investment market performs its proper function of equalising new issues with net available investible funds, there will be a corresponding increase in capital outlay. If the increase in investible funds occurred at a time of trade depression and pessimism, the market might fail to evoke a sufficient amount of new issues. But when it occurs during the active phase of the trade cycle, the same expanding demand which produces the increase of investible funds is likely to make traders optimistic and eager to promote new capital outlay as fast as the market will allow.

XIV. THE PRODUCTION PERIOD.

The prominence assigned by Mr. Keynes to the "production period" in his theory of the credit cycle depends upon the assumption of an isolated impulse. According to him, if at a certain moment the production of consumption goods is suddenly increased or diminished, there will be an interval, equal to a production period, during which earnings have been affected, but the output coming on to the market has not. When the increased or decreased output becomes available, there is a sudden fall or rise of price.

What Mr. Keynes means by the production period is made clear by a passage on page 280 of vol. i., "the time occupied in building a house may be no longer than the time occupied between ploughing the wheat-fields and eating a loaf of bread raised therefrom." Evidently the production period is the total time required for all the successive processes added together (see also vol. ii., pp. 104-5).

A production period so understood would intervene between a decision to accelerate or retard production, and the appearance of the increased or decreased output of the finished goods, if no process could be accelerated or retarded till the output of the preceding process had been increased or diminished.

But of course in practice that is not so. Some stock of the products of each process is kept on hand ready for use in the next. All can be accelerated simultaneously by drawing on these stocks, and after an interval equal to the longest single separate process the replenishment of the stocks will be proceeding as fast as they are being drawn upon. A stage of manufacture constitutes a "separate process" when both the material with which it is fed and that which it produces can wait in stock for an interval of time which can be varied at will. If those conditions are fulfilled, the process can be accelerated or retarded independently of the preceding and succeeding processes. There will usually be many separate processes carried out in a single factory.

Some processes will occupy no more than a few hours or even minutes, but some will take a substantial time. This is particularly true of the production of raw materials from the soil. But in such cases the market usually safeguards industry against a shortage by providing large stocks.

On the other hand, big capital installations are apt to have long production periods, amounting sometimes to several years, and for them there is no mitigating circumstance like the stocks of agricultural products.

Mr. Keynes distinguishes *surplus* stocks, which "are to be regarded as liquid," from "normal stocks required for efficient business," which "are part of Working Capital and therefore in process" (vol. i., p. 129). "Those stocks, which are in course of transport or are being carried between the seasons or are required to average out the fluctuations of harvests or are a necessary safeguard against interruptions to the continuity of production, must be regarded as a part of working capital and not of liquid capital" (vol. ii., p. 134).

This is a very desirable and proper distinction. But it does not mean that the stocks which are part of working capital are an irreducible minimum which cannot be drawn upon in any circumstances. On the contrary, their essential purpose is to preserve "continuity of production," and when needed for that purpose they are drawn upon.

The circumstance on which the interval between a change in demand and its effect on output chiefly depends is not the production period, but the state of the producers' commitments. If their order books are full, a decline of demand will not affect output till their commitments have been worked through. On the other hand, when an industry is under-employed, new orders can often be executed almost immediately by a simultaneous hastening of all the successive processes. Such delay as occurs is usually attributable rather to the need for adjusting organisation, bringing labour into employment, etc., than to anything directly related to the production period.

Even therefore in the theoretical analysis of the effects of an isolated impulse, it is not true to say that a production period intervenes between the change in production of consumption goods and the change in supply. The interval depends mainly on the state of unfilled orders, the state of stocks, and the facilities for putting additional labour and capital to work.

XV. THE MONETARY ASPECT OF THE CREDIT CYCLE.

Among possible causes of the upward phase of the credit cycle, Mr. Keynes mentions "a reaction stimulated by cheap money from a previous period of under-investment, i.e. a previous slump" (vol. i., p. 283). "Most often of all perhaps," he says (p. 287), "an upward phase is brought about as a reaction from a previous downward phase and a downward phase as a reaction from a previous upward phase, boom succeeding slump and slump succeeding boom; though the precise date at which the reaction commences will be usually determined by some independent change in the environment due to non-monetary factors." (Does this

mean that "a new technical discovery, such as steam or electricity or the internal-combustion engine" would determine a "precise date"?) Recession starts when the rise of wages following on the rise of prices requires "more and more money" for the support of the Industrial Circulation. "A point will come, therefore, when the effort to expand or to maintain the volume of the Industrial Circulation will drive the effective Bank rate to a level which is, in all the circumstances, deterrent to new investment relatively to saving" (p. 291).

When will this occur and how long will it go on? In my opinion the answer depends not on anything essential in economic theory but upon the practice and policy of the central bank. Under the conditions of 1844 to 1914 the Bank of England was guided by the state of its free reserve (the notes in reserve in the Banking Department). When that reserve fell unduly low, Bank rate would be put up; when the reserve was high, Bank rate would be put down. The reserve was judged by its ratio to deposits, the neutral or standard ratio being about 45 per cent. (perhaps from 1900 to 1914 it was more like 50 per cent., and before 1890 40 per cent.).

The Bank proceeded empirically, putting the rate up and down by stages of $\frac{1}{2}$ or 1 per cent. till the reserve responded. It was therefore not liable to be misled by a hidden change in the natural rate. The effect of such a change would be simply to require one or two steps more or one or two steps less before the response was felt.

"By controlling the price and quantity of bank-credit, the banking system necessarily controls the aggregate expenditure on output" (vol. i., p. 182). "The *net* result depends on the policy of the banking system in conjunction with all kinds of other factors. But, in so far as the banking system is a free agent acting with design, it can, by coming in as a balancing factor, control the final outcome" (p. 183).

This "balancing factor" comes into operation, when it is found that "more and more money" is required, and the central banks' gold reserve is low. With a deterrent

Bank rate, windfall losses and unemployment will permit some reduction of the requirements of the Industrial Circulation. But "monetary equilibrium will continue to require the indefinite prolongation of chronic unemployment," until "finally, under the pressure of growing unemployment, the rate of earnings—though perhaps only at long last—will fall. This is the consummation of the whole process of pressure" (vol. i., p. 207), and it is only then "that a true equilibrium will be re-established" (p. 208).

Clearly Mr. Keynes regards the restoration of monetary equilibrium as a protracted process, and one of which the duration has little if anything to do with a "production period." The deterrent Bank rate is a *continuing* influence; it will be kept in force till the original monetary disturbance has been rectified, i.e. till the reserve position of the banking system has been restored.

I think Mr. Keynes's account of the process requires to be corrected or rather to be supplemented at one or two points.

(a) In the first place, if the deterrent Bank rate is imposed at the culmination of a time of productive activity, its effect will be delayed by producers' commitments. Existing orders must be worked through in each industry before unemployment begins.

(b) Secondly, there must evidently be a considerable interval between the moment at which earnings have been reduced (by unemployment and wage cuts) to any particular figure and that at which the corresponding reduction has been made in balances. The shrinkage of balances will continue for a time equal to that interval (possibly many months) after earnings have reached their lowest point.

(c) At the moment when the required restoration of bank reserves has been effected, i.e. when enough money has been withdrawn from active circulation, a considerable amount of unemployment will still prevail, and, while there is unemployment, wages will probably continue falling. The monetary circulation will still be shrinking and the deterrent credit policy will make way for a policy of credit

relaxation. There may be a doubtful interval when the banks fail to overcome the deterrent effect of the prospect of falling prices, but, once they do so, credit expansion will begin.

(d) I have already pointed out that to a great extent unemployment arises directly from the shrinkage of demand without the intervention of a fall of prices. In so far as Mr. Keynes leaves this out of account, he tends to exaggerate the length of time for which the deterrent Bank rate must be applied. The requisite reduction of earnings may be accomplished almost entirely by way of unemployment with very little reduction of wages (though under pre-war conditions wage cuts occurred at an early stage in those trades which had sliding scales).

At the moment when the reserve position of the banks has been successfully restored, industry will be still under-employed and wages will be still falling. The monetary circulation will go on shrinking, and the reserves of the banks will grow further. The reserves will become redundant and accordingly the banks will be led to relax credit. The other phase of the credit cycle thus begins, and again we have to ask what its duration will be.

XVI. LIQUID AND WORKING CAPITAL AND THE CREDIT CYCLE.

For the reasons given above it cannot be related to a production period. And when he comes to discuss working capital, Mr. Keynes drops the hypothesis of an isolated impulse, and derives a calculation from the need for increased working capital as a condition of increased production.

If fluctuations in the amount of the revolving fund of working capital "are substantial relatively to the time-rate at which new investment can be made available to replenish working capital either from new savings or by diminishing the volume of investment in liquid capital . . . our analysis may furnish us with an important clue to the explanation of the time element in booms and depressions" (vol. ii., pp. 102-3).

Mr. Keynes proceeds accordingly "to estimate the various factors quantitatively," and concludes:—

"Generally speaking, the normal percentage of the national income saved (in this country) is put at 12 to 15 per cent. If, therefore, Working Capital is normally 40 to 50 per cent. of the national income and fluctuates 10 to 15 per cent., the fluctuations in Working Capital are from a third to a half of a year's savings" (vol. ii., p. 112).

"When . . . the time comes for the replenishment of working capital, it may be *impossible* to effect this rapidly without rupturing the equilibrium of prices and incomes. Even if appropriate steps are taken in good time, two years or more may elapse before working capital can be restored; and if such steps are not taken, a longer interval will be required" (vol. ii., pp. 112-13).

This does not mean that the replenishment of working capital necessarily takes two years or more, but that it cannot be accomplished in less "without rupturing the equilibrium of prices and income," i.e. without the occurrence of a windfall gain. The calculation seems to me to be rather dubious. I agree that if the process is hastened, and working capital is reinforced from stocks, the next stage will be to replenish the stocks (unless they happen to have been excessive at the outset), and this will involve a rise of prices above replacement value. But theoretically *any* encroachment on stocks is likely to have to be corrected in this way, and the difference between gradual and rapid adjustment is one of degree only.

The expression "rupturing the equilibrium between prices and incomes" suggests a much more violent disturbance than is at all likely to occur. And in no case is the rise of prices a *prior* condition of the increase of production. So long as adequate stocks exist to provide working capital the increased production can proceed; the rise of prices is merely a consequence.

Moreover, there is an important difference between the working capital required for consumption goods and that required for capital goods. A demand for consumption

goods can only be satisfied by the finished goods, and the consumer only pays for them when he gets them. But capital goods are paid for by the investor, and he usually puts up the money or a substantial part of it while the goods are in process. Thus the need for working capital for the production of capital goods is provided for by the ultimate purchaser of the goods. His investment takes effect from the beginning of the production period.

Now it is characteristic of the credit cycle that the production of capital goods undergoes much bigger fluctuations than the production of consumption goods. The fluctuations over any period of time in the working capital required for the production of consumption goods must be on quite a small scale in comparison with the total amount of investment.

In vol. ii., Chapter XXIX., Mr. Keynes explores the possibility of fluctuations in working capital being balanced by fluctuations in liquid capital (stocks of commodities). He attributes to me (quite mistakenly) the view that they can, that is to say, that at the end of a depression there will be a sufficient accumulation of goods in stock to meet the need for working capital throughout the phase of revival, and he quotes in support two passages from my *Trade and Credit*. But these passages do not assert anything of the kind; they are concerned with what happens in case of an increase of productive activity *when the price level is assumed to remain unchanged*, and each is followed by an examination of what happens when this condition is removed.

Nevertheless I am quite prepared to maintain that, under the normal conditions of the trade cycle, the variations of the need for working capital are within such limits that they can be readily met from the stocks of liquid capital in the interval before those stocks can be restored to normal by a suitable adjustment of output.

I think Mr. Keynes greatly exaggerates the magnitude of the problem of providing working capital. In order to show that "the true surplus stocks of liquid capital, which are at any time existing, are too small to have any decisive influence on the replenishment of working capital"

(vol. ii., p. 133), he appeals to statistics which indicate that "the truly redundant surplus of liquid goods . . . seldom reaches even in the case of an individual commodity, the equivalent of more than a very few months' consumption at the most ; and for the average of commodities the maximum is of course much smaller" (vol. ii., p. 134). By the "redundant surplus" in this passage he means the stocks over and above those "which are in course of transport or are being carried between the seasons, or are required to average out the fluctuations of harvests or are a necessary safeguard against interruptions to the continuity of production."

Now Mr. Keynes estimates *total* working capital as normally the equivalent of six months' supply of goods (vol. ii., pp. 103-7). And he arrives tentatively at the conclusion that "the amplitude of the fluctuation in the demand for working capital will be about . . . 15 per cent. from peak to trough in severe cases and 10 per cent. in the more usual type of case."

If that calculation is correct, the addition to working capital required over the whole interval from the depth of depression to the height of activity is 10 to 15 per cent. of six months' supply of goods, say, two and a half to four weeks' supply. Over an interval which would usually be three years or more that is no very tremendous task.

The six months' supply of goods includes the working capital of agriculture, which has to be very much heavier in proportion to annual supply than for industry. It has to provide for a long production period, for seasonal stocks between harvests, and for a fluctuating carry-over from one harvest to another. The carry-over is available as a precaution not only against a short crop in the succeeding year, but also against the demand arising from unforeseen trade activity or any other contingency. In general the demand arising from trade activity in any one season would be small compared to the carry-over as a whole, and it would be exceptional for the activity to coincide with a shortage. That combination of circumstances when it did occur, would cause a substantial rise of price of the

commodity concerned, and might noticeably delay the revival of the industries using it as a material. But it would only very slightly affect the rate of progress of trade revival as a whole, and, if the revival is spread over several years, there is time for the shortage and high prices of one season to bring about an extension of cultivation of the crop concerned in the next.

Given an adequate stock of natural products, no manufacturing process is likely to be delayed by a lack of working capital in the physical sense, so long as it can obtain the requisite financial accommodation. As I have already pointed out, most separate manufacturing processes (apart from the construction of fixed capital) are very short. Occasionally some chemical, molecular or organic process will extend over a few weeks or even months, but in very many manufactures there is nothing of the kind involved. When circumstances require, the manufacturer will always seek to provide against delays by maintaining an adequate stock of the output of the process. If a process takes three months, a stock of three weeks' output would suffice to guard against the next succeeding process being delayed in the event of an immediate increase of output being demanded to any extent up to 23 per cent. So violent a change in activity would be rare even in one industry: in industry as a whole or in any considerable group of industries it would never occur.

I have dealt with stocks of intermediate products because an insufficiency of stocks of finished consumption goods would never delay revival. Its immediate effects would be on the one side a rise of prices against the consumer and on the other an increase in the orders given to producers. The rise of prices against the consumer ("rupturing the equilibrium between prices and incomes") need not be considerable and indeed need not occur at all, unless there is some appreciable delay on the part of producers in executing the new orders. If retailers' stocks average about two months' supply, they could stand a 10 per cent. increase in sales for a long time. It would take ten months to reduce their stocks by half. If in

order to produce an additional shirt it were necessary to start "with the preparation of the cotton fields for sowing" (vol. ii., p. 104) ten months or even more might be required. But spinning can be started on existing stocks of raw cotton, weaving on existing stocks of yarn, the finishing processes on existing stocks of cloth and the cutting and making on existing stocks of finished cloth. All can be set in motion simultaneously.

Given adequate financial accommodation, it is only through shortage of materials or intermediate products that industrial activity can be delayed by a want of working capital, and it is extremely unlikely that such a shortage as would involve delay would occur except to a very restricted extent.

I do not for a moment dissent from Mr. Keynes's view that the process of reconstituting working capital during revival will be effected partly through the instrumentality of a rise of the prices of finished goods. The rise of prices above replacement value retards consumption in comparison with production and at the same time places in the hands of the retailers in the form of a "windfall gain" the additional resources required to carry this increment of liquid capital, without encroaching on the supply of savings required for other purposes.

But this process is carried out easily and smoothly at whatever rate of progress the conditions of the revival may require, and does not govern the rate of progress of the revival. Nor should the rise of prices of finished goods, which is required from time to time to reconstitute stocks by retarding consumption, be confused with the rise of prices which occurs when productive activity is overtaking capacity. It is this latter rise which, as it gradually extends throughout industry, is characteristic of the active phase of the credit cycle. Therefore I cannot agree that "the phenomena of the boom may represent a struggle, concealed under the veil of the credit system, to replenish working capital faster than would be feasible under a regime of stable prices" (vol. ii., p. 103).

XVII. THE DURATION OF THE CREDIT CYCLE—
INTERNATIONAL ASPECTS.

Neither the production period nor the time required for providing working capital determines the duration of the active phase of the cycle. I should suggest that the pace is set by the process of credit relaxation itself.

Cheap money does not of itself give any great immediate impetus to business. The proportion of borrowers sensitive to the rate of interest is not very large, and so long as there is no additional inducement in the form of a prospective rise of prices, to reinforce the attractions of cheap money, the total effect on markets will be small and gradual. In the early stages of revival there is no appreciable rise of prices because production can be easily extended. It is only when industry after industry begins to find its output approaching capacity that a general rise of prices takes effect and the pace is hastened.

Post-war experience suggests that in a country which is isolated from the monetary systems of its neighbours the process of revival can be greatly accelerated. The transition from intense depression to general and prosperous activity took little more than a year in the United States in 1922-23, and in Switzerland contemporaneously it took about the same time. But under pre-war conditions each country had to keep pace with the others. If the revival went a little faster in one of them, it began to lose gold and had to contract credit. The result was that progress was nowhere uninterrupted and the transition from the depth of the depression to full employment would usually take two or three years. There would then follow a period when employment and output could no longer be expanded and the whole effect of credit expansion showed itself in rising prices.

The duration of the entire phase from the beginning of revival depended upon the progress of the gold reserves. This was really an *international* matter. Mr. Keynes, in my opinion, gives insufficient prominence to the international aspects of the credit cycle. He defines the cycle in terms

of the price level, for by "the alternations of excess and defect in the rate of investment over that of saving" he means alternations of excess and defect of the price level over costs. But with a gold standard the price level is determined internationally. The internal price level of any particular country varies relatively to its external price level in response to the credit measures taken to correct any variation in its balance of payments. But the external price levels of all countries with a common monetary standard move together. I regard the credit cycle as essentially a periodical fluctuation in the world value of gold.

Mr. Keynes recognises the international character of the cycle in principle (vol. ii., pp. 221-2 and 287), but he nowhere works out the consequences in regard to the rate of progress and the duration of the cycle.

XVIII. THE FOREIGN BALANCE.

In relation to monetary theory in general, on the other hand, Mr. Keynes entirely recognises the outstanding importance of international influences. "With an international currency system, such as gold, the primary duty of a Central Bank is to preserve *external* equilibrium. Internal equilibrium must take its chance or, rather, the internal situation must be forced sooner or later into equilibrium with the external situation" (vol. i., p. 164).

The "Foreign Balance" of a country Mr. Keynes defines to be "the balance of trade on *income* account," and the "Foreign Lending" to be "the unfavourable balance of transactions on *capital* account, i.e. the excess of the amount of our own money put at the disposal of foreigners through the net purchase by our nationals of investments situated abroad, over the corresponding amount expended by foreigners on the purchase of our investments situated at home" (pp. 131-2). (Investment, as Mr. Keynes defines it, is strictly confined to an increment of capital, i.e. actual goods. It is a portion of *output*. It is obvious, however, that investments abroad are intended here to

include such items as a loan to a foreign government to meet a budget deficit, or purchases of shares and other rights representing capitalised goodwill, economic rent or monopoly gains, elements of value which can never have been a part of output.)

The requisites of equilibrium are summed up thus: "The amount of the Foreign Balance in any given situation depends on the relative *price levels* at home and abroad of the goods and services which enter into international trade. The amount of Foreign Lending, on the other hand, depends on relative *interest rates* (corrected, of course, for variations of risk, etc., so as to represent the net advantage of lending) at home and abroad" (vol. i., p. 163).

"Raising the Bank rate obviously has the effect of diminishing *L*, the net amount of lending to foreigners. But it has no direct influence in the direction of increasing *B* (the Foreign Balance). On the other hand, just as the dearer money discourages foreign borrowers, so also it discourages borrowers for the purposes of home investment—with the result that the higher Bank rate diminishes the volume of home investment. Consequently total investment falls below current savings (assuming that there was previously equilibrium) so that prices and profits, and ultimately earnings, fall, which has the effect of increasing *B*, because it reduces the costs of production in terms of money relatively to the corresponding costs abroad. On both accounts, therefore, *B* and *L* are brought nearer together, until in the new position of equilibrium they are again equal" (vol. i., pp. 214-5).

Upon the position taken in these extracts I have several criticisms to make. The subject falls into two parts: (a) the processes affecting the foreign balance, and (b) those affecting foreign lending.

(a) The amount of the foreign balance, Mr. Keynes says, depends on the relative price levels at home and abroad of the goods and services which enter into international trade. But is there ever a difference of price levels of these goods and services to any significant extent? If we compose an international index-number of

the "principal standardised commodities . . . in which there is an international market," including "manufactured articles, such as cotton piece-goods, which are the subject of international trade on an important scale," then "after allowances for tariffs and costs of transport, the price of every constituent of an International Index must be the same for all countries if they are reduced to terms of the same currency" (vol. i., p. 70).

This statement does not apply without qualification to all foreign trade products. Undoubtedly there is often room for a difference in price, partly owing to the inevitable imperfections of the less highly organised markets, and partly owing to differences of quality, pattern, etc., between competing products from different sources of supply. Nevertheless it remains approximately true that whatever a country buys or sells in external markets has to conform to an international price. Accordingly the foreign balance cannot be said to depend on the relative price levels at home and abroad of goods and services entering into international trade. And it is in fact quite unnecessary to assume any change in relative price levels of these goods and services (or foreign trade products) in explaining variations of the foreign balance.

When a "higher Bank rate diminishes the volume of home investment," consumers' income and outlay are reduced. The demand for products of all kinds falls off. So far as home trade products are concerned, the decline of demand will directly cause a curtailment of output and a fall of prices. So far as foreign trade products are concerned, the effect will be, at any rate mainly, a decrease of purchases, for prices cannot move far without getting out of relation with international markets. The decrease of purchases will be principally a decrease of imports, but there will also be a decrease of purchases of home-produced foreign trade products.

The producers will endeavour to make good the loss of sales by turning to the export markets, and they may make some price concessions, but the effect, if any, on world prices is likely to be small. For the most part such

price reductions as occur in foreign trade products will be small, and will tend to affect each market in which they occur *as a whole*, rather than to produce a change in relative price levels of different countries.

Therefore the changes of price level that occur in the process of securing international equilibrium are mainly changes of internal price levels relative to external. Short-period equilibrium is attained by reducing or increasing consumers' income and outlay as the case may require, and so reducing or increasing the demand for foreign trade products (and particularly for imports). On the other hand, *ultimate* equilibrium requires the adjustment of wages to the internal price level, and this when it occurs gives rise to a windfall gain or loss to the producers of foreign trade products, and therefore in the long run to increased or reduced productive power being applied to those products.

XIX. FOREIGN LENDING.

(b) Without dwelling further upon the foreign balance, I turn now to foreign lending, which Mr. Keynes holds to depend on relative interest rates. I would approach the subject from a different direction. It is the function of the investment market to equalise capital outlay and savings (in the usual sense). The market discharges this function by equalising its purchases of new issues with its net sales of securities, and any failure to do so is reflected in an increase or decrease of the market's indebtedness to the banks.

The market in a capital-exporting country will deal regularly in foreign issues of an international character, and, if it is threatened with a loss of equilibrium, it need not confine itself to stimulating or discouraging new issues, but has the alternative of selling or buying securities in foreign markets. So far as international securities are concerned, the world approximates to a single market in which the centres with an excess of securities sell to those with a deficiency, so that only a net excess or deficiency in the world as a whole requires to be corrected by measures relating to new issues.

But this world market is not altogether independent of the markets in local securities. To the individual investor at any centre the two classes of securities present themselves as alternatives. Jobbers will aim at keeping their holdings of each class separately normal. An excess or deficiency of demand for the local securities will be met by a rise or fall of quoted prices. And as the prices of international securities are determined in world markets, that will alter the relative attractiveness of the local securities in comparison with the international. There may also be some effect upon new issues of local securities, but the predominant effect over a short period will probably be to pass on the excess or deficiency of investment demand to the international market.

In the international market as a whole equilibrium will require an adjustment of new issues. That will be effected in the long run by price and yield, i.e. the long-term rate of interest, but over short periods other methods (those referred to above, p. 382) will also be resorted to.

If the investment market fails to maintain equilibrium, a change in the short-term rate of interest will be required in all the countries concerned, to correct the consequent increase or decrease in the volume of bank credit. In the equilibrium position each country's foreign lending will be equal to the excess of its investible funds or savings (in the usual sense) over its investment at home.

Suppose now that in one country the foreign balance is disturbed, and the short-term rate of interest has to be raised or lowered relatively to rates abroad. What will be the effect on its foreign lending? Apart from the changes in consumers' income and outlay which modify the foreign balance, there will be a direct effect upon the flow of funds for temporary investment, and there will be a rather more uncertain and indirect effect on long-term investment.

Take the case where Bank rate is lowered, and consider first the effect on long-term investment. In order that foreign lending may increase, there must be either (a) increased investible funds available, or (b) diminished investment at home, or (c) a release of cash probably

involving an application to external investment of newly created bank credit. A credit expansion will, no doubt, bring about an increase in investible funds, because it will increase the consumers' income and particularly the traders' net gains. But this will only occur after an interval. And investment at home will not be diminishing but increasing, for the increase in the consumers' income and outlay will make business more profitable and will offer opportunities for extension.

There may be some tendency to finance capital extensions with bank advances and thus to relieve the new issue market, but this is not likely to result in a net decrease in the volume of new issues for investment at home.

The increase in foreign lending really depends on the creation of bank credit in the form of bank advances for the acquisition of securities. The bank advances need not be themselves for the acquisition of foreign securities. In any case they place new investible funds in the hands of the sellers of the securities, and so increase the available supply of investible funds in the market. The additional funds may be spent in whole or in part on the purchase of securities from abroad.

But, of course, the foreign stock exchanges which sell these securities will in turn seek to invest the proceeds. The ultimate distribution of the proceeds will be to those places in which new capital outlay is most readily stimulated by the prevailing ease of investment markets as a whole. There may not on balance be *any* export of capital from the country in which cheap money started. But in the probable case where the lead is taken in the credit movement by an important financial centre which is normally an international lender, such an export is likely to occur, because the "fringe of unsatisfied borrowers" is likely to be found mainly elsewhere.

XX. MIGRATION OF BALANCES SEEKING TEMPORARY INVESTMENT.

I come next to the other side of the question, the movement of funds seeking temporary investment. If the short-

term rate of interest in any country is lower than abroad, there will be a tendency for bankers and others with balances available for temporary investment, to place them in bills on foreign countries or to deposit them abroad. But investment of this character involves an exchange risk, and in general the charge for forward exchange is at or near the level at which it counteracts the gain in interest. (No one has expounded this part of the theory of forward exchange so well as Mr. Keynes.)

That is not invariably so. It often happens, in fact, that the charge for forward exchange is less than the difference of interest so that some profit is to be made by the transfer of funds. That means either that lenders are not forthcoming to take advantage of the profit, or that there are speculators in exchange whose dealings in forward exchange more or less offset the demand of the lenders.

With regard to the former alternative, it is, of course, obvious that the funds available for temporary investment abroad will not be unlimited. They will consist mainly (*a*) of balances forming part of traders' working capital and not immediately required in their business, and (*b*) of the assets of the banks themselves.

It will only be worth while for the bigger traders to invest such balances abroad. It will not be worth while for the small man to establish relations with foreign banks or branches, and to keep himself informed about conditions abroad, and the profit on small transactions would be eaten up by commissions and expenses. And even among the big men only those who can foresee that the money will not be required in their own business for a definite period (*a* month or more) will place it abroad.

A banker who places money abroad has to cut short his other assets. And this is by no means easy. If he calls in advances or refuses new advances, he will be putting pressure on his own customers and possibly endangering the future of his business. Advances also usually bring him a higher yield than his more liquid assets, so that the gain from substituting bills or deposits abroad for them will be less. He can sell investments, but these also

probably yield a relatively high rate of interest. His natural course is to reduce his holding of bills at home, for he is then substituting one short-term asset for another. But in all countries such bills play a vital part in the liquidity of the bankers' position. Bills and deposits abroad, even when covered by forward exchange transactions, can never be quite in the same class.

It should also be borne in mind that, when depositors transfer funds abroad, the bankers who lose the deposits have to effect a corresponding contraction of their assets, and are the less able to make room for their own foreign assets.

There is, however, one form of international short-term investment which avoids these obstacles, and that is the acceptance on behalf of a foreign client. Low discount rates at any centre stimulate this business in competition with other centres. And as the credit instruments to which it gives rise are not drawn in foreign currencies, the banks which purchase them suffer no disturbance of their proportion of liquid assets. The character of an external investment is given to the transaction by the client's obligation to remit the means of paying the bill on maturity, and it is he who has to bear the exchange risk.

Acceptance business, of course, is not capable of being indefinitely extended. It is limited by the extent of the transactions of the traders who have established relations with accepting houses at the centre concerned.

To say that the funds available for temporary investment abroad are limited does not imply that they are not large. But the fact that they are limited will result sooner or later in the flow stopping, even though there is still a profit to be made.

When the difference of interest rates first occurs, and people begin to transfer balances abroad, the exchanges will become unfavourable. But this only applies to the spot rates. Forward rates will tend to move in the opposite direction, in so far as the people who are investing abroad want to provide for a return of their money without

exchange loss. If these opposite tendencies produce a sufficient discount on foreign currencies sold forward to offset the gain of interest, the movement of balances will be completely checked. But there may be people willing to speculate in exchange or to take a risk. They may expect that there will soon be a still bigger difference of interest rates, or they may anticipate that cheap money will start inflation and so affect the exchanges unfavourably, or the exchanges may already be so favourable (at import gold point) that they cannot become more so without departing from the gold standard. From such motives the forward sales of foreign currencies will be partly or even wholly offset, the discount on them will be insufficient to cancel the gain of interest, and balances will move.

The migration of balances is likely to be concentrated into a short time. The prospect of profit offered by the gain of interest, *minus* the charge for forward exchange, will be sufficient to induce the owners of certain balances, which we may call "susceptible," to transfer them. There is no reason why all the susceptible balances should not be transferred *at once*; presumably there is nothing to be gained by delay, and a week or two will allow time for depositors to give notice and for bankers to sell bills. If the movement is large the exchanges will reach the gold export point; then when all the susceptible balances have been transferred the exchanges will recover and a batch of less susceptible balances will seek transfer. The spot rates of exchange will gradually become more and more favourable and approach closer to the forward rates, till at last the forward discount on foreign currencies vanishes altogether. In other words, by the time all balances have been transferred even those so reluctant that they will only move when they can guard themselves against any loss by exchange and still secure the whole gain of interest, there will no longer be any pressure on the forward exchange market at all. This process can be hastened by any increase of speculative forward purchases of foreign currencies, or retarded by a decrease. It may likewise be modified by a change in the difference of

short-term interest. But whether hastened or retarded, it is essentially a *transitory* phase.

Undoubtedly there will be fresh susceptible balances continuously coming into existence and seeking to be transferred, but on the other hand, the balances already transferred will be gradually recalled as they come to be needed for other purposes, and the net result of the new and old balances, if irregular, will presumably be small.

Even therefore if the difference of short-term rates of interest continues for a long time, the effect upon foreign lending will come to an end. And when the difference of rates of interest ceases, the balances temporarily lent abroad will come back, with a favourable effect on the exchanges as conspicuous as the unfavourable effect of their original departure.

The foregoing exposition is just as applicable to the contrary case where the short-term rate of interest is above foreign rates and attracts foreign balances.

It is therefore a grave mistake to rely upon attracting foreign balances by means of a high Bank rate as a feature of monetary policy, except as a purely temporary expedient. And it is also a mistake, when the circumstances require cheap money, to keep Bank rate up for fear of an outflow of balances. An inflow of balances supports the exchanges and an outflow depresses them, but, once the movement is completed, the gain of balances is a source of weakness, the loss is a source of strength. The one tends to make the country a short-term debtor, the other to make it a short-term creditor. If a country is a short-term creditor, any adverse movement of the exchanges is likely to lead to a recall of foreign credits; they, in fact, play the part of an additional gold reserve. Short-term foreign indebtedness is the equivalent of a negative gold reserve.

This subject has acquired special importance in recent years because we have seen great contrasts of contemporaneous economic conditions in different countries. There has been severe depression in the United Kingdom concurrently with activity in the United States and other countries.

Such disparities survived the re-establishment of the gold standard, and it was believed to be impossible to remedy the depression in this country by lowering Bank rate without causing such an outflow of balances as would have endangered our gold reserve.

The re-entry of a number of countries into the gold standard, some under the influence of deflation and others under the influence of inflation, produced anomalies which should not appear in anything like so acute a form under the normal operation of the gold standard.

CHAPTER VII

INTERNATIONAL SHORT-TERM INVESTMENT.

MR. KEYNES'S PROPOSALS.

IN Volume II., Chapter XXXVI., of his *Treatise on Money*, Mr. Keynes deals with the disturbances arising from the international migration of balances, and he makes certain proposals for the future practice of central banks, which are designed to mitigate such disturbances.

"Circumstances," he says, "may exist in which, if a country's rate of interest is fixed for it by outside circumstances, it is impracticable for it to reach investment equilibrium at home. This will happen if its foreign balance is inelastic, and if, at the same time, it is unable to absorb the whole of its savings in new investment at the world rate of interest" (vol. ii., pp. 303-4).

"In modern times, when large reserves are held by capitalists in a liquid form, comparatively small changes in the rate of interest in one centre relatively to the rate in others may swing a large volume of lending from one to the other. That is to say, the amount of foreign lending is highly sensitive to small changes. The amount of the foreign balance, on the other hand, is by no means so sensitive. . . . Even a small and temporary divergence in the local rate of interest from the international rate may be dangerous. In this way adherence to an international standard tends to limit unduly the power of a Central Bank to deal with its own domestic situation so as to maintain internal stability and the optimum of employment" (p. 309).

If I interpret these passages correctly, the danger to

which Mr. Keynes refers is that the continuance of the discrepancy between the foreign balance and the *long-term* foreign lending may be made possible by an offsetting movement of *short-term* foreign lending. The foreign balance being insufficient to cover the foreign lending, an outflow of gold threatens, Bank rate is put up, and thereupon there ensues an inflow of foreign money which restores apparent equilibrium, at a stage at which the rise of Bank rate is still quite insufficient to re-establish underlying equilibrium. The country is therefore placed in the position of borrowing short and lending long.

In the contrary case where the foreign balance exceeds the long-term foreign lending, and Bank rate is reduced, the country will become a short-term lender.

The argument does not apply only to those cases where long-term foreign lending is the source of disturbance. It is, I think, equally relevant to *any* case where external equilibrium is disturbed, and the appropriate credit measures fail to restore it promptly. The gap between exports and imports, visible and invisible, on current account and on capital account, is temporarily filled by a capital item in the form of a flow of money seeking short-term investment. The result is that the effect of the credit measures is still further delayed, and the progressive accumulation of short-term indebtedness becomes itself an independent threat to equilibrium.

We must distinguish here between the *apparent* equilibrium, which depends upon a flow of short-term investments, and *underlying* equilibrium, which means equality between the items other than short-term investment. Underlying equilibrium requires the foreign balance to be equal to the *long-term* foreign lending (or borrowing if the foreign balance is negative).

Mr. Keynes makes two proposals. One of these is that "a Central Bank should be in a position to control when necessary, within the limits set by the gold points and the relative rates of interest at home and abroad, the premium or discount of the forward exchange on the spot exchange" (vol. ii., p. 325). Central Banks would fix

week by week "the terms on which they are prepared to buy or sell forward exchange on one or two leading foreign centres."

I understand the purpose of this proposal to be to enable a Central Bank to raise or lower its discount rate relatively to foreign rates without thereby attracting or repelling foreign short-term funds. If it wishes to lower the Bank rate without causing an efflux of money, it will offer to sell forward exchange on the selected foreign centres at a discount equivalent to the differences of short-term interest. Suppose it lowers Bank rate 1 per cent. below that at a foreign centre (the relation of Bank rate to market rate being the same at both centres); then it will at the same time sell exchange on that centre three months forward at $\frac{1}{4}$ per cent. discount as compared with the market quotation for spot exchange (and in proportion for other periods), and, so long as it does so, no one else will be able to sell forward exchange at a less discount. The Central Bank would be in a position to govern the market in such a way that no one could gain from the higher rate of interest by transferring short-term money to the foreign centre except by incurring an exchange risk.

In effect the Central Bank would be a borrower of foreign currencies and a lender of its own currency, and, unless when the transaction matured the foreign currency had fallen sufficiently in value, there would be a loss.

In Mr. Keynes's *Tract on Monetary Reform* (to which he refers in the *Treatise*, vol. ii., p. 325), he proposed that Central Banks should not deal simply in forward exchange, but should accompany every sale of forward exchange with an equal purchase of spot, and every purchase with an equal sale.

A forward sale taken by itself tends to depress not only the future value but the spot value of the currency sold, because it increases the total of the assets in that currency to be held by the dealers in the foreign exchange market. If it is accompanied by a spot purchase, this effect is eliminated; in fact there would presumably be a slight *rise* in the spot price. The combination of spot

and forward transactions was what was recommended (at Mr. Keynes's suggestion) by the Genoa Conference. ("Exchange," Resolution 2.) Since the Central Bank could earn interest on the spot exchange purchased, it should escape the risk of loss by this procedure.

So long as the gold standard is (and is expected to be) in full working order, the market will not quote a rate of foreign exchange, either spot or forward, outside the limits of the gold points. For example, when Bank rate is lowered, the Central Bank cannot prevent an outflow of money by selling forward exchange on a centre for which the spot quotation is already at or near the gold export point. Similarly, when the spot quotation is at or near the gold import point, an inflow of money cannot be prevented by purchases of forward exchange.

Accordingly, Mr. Keynes makes his other proposal, that the Central Bank's buying and selling prices of gold should be much farther apart than at present, e.g. that they should be respectively 1 per cent. below par and 1 per cent. above. This proposal though associated by him with that relating to dealings by the Central Banks in forward exchange is not necessarily dependent on it. Even if forward exchange were left entirely to the free operations of the market, a wider gap between gold points would allow more room for the natural obstacle provided by exchange risk against the migration of money.

In considering these two proposals together, it will be desirable to be quite clear as to what it is that is to be guarded against.

Suppose that a country faced with an unfavourable balance puts up Bank rate, and that the effect is to attract foreign short-term money. So long as the inflow of foreign money is actually continuing, the unfavourable balance is partly or wholly offset. The Central Bank is likely to make a more moderate rise in Bank rate than would otherwise be necessary, and so to protract the process of returning to equilibrium. Whether that be so or not, a time will come at which the inflow of money ceases, the migration of all susceptible balances having been completed. If at that time

underlying equilibrium has not been re-established, a high Bank rate must be maintained, and there will nevertheless be an outflow of gold, which will continue till underlying equilibrium has been secured. Alternatively it is possible that by the time the inflow of foreign money has ceased, equilibrium will already have been restored. In either event the reduction of Bank rate to the international level will lead to an outflow of the foreign money temporarily attracted by the high rate.

This is, I think, the danger that Mr. Keynes has in mind. The inflow of foreign money during the period of credit contraction does no harm in itself; it merely delays the return to underlying equilibrium. But *after the credit contraction is over*, the accumulation of short-term indebtedness to foreign creditors becomes an embarrassment. The withdrawal of the foreign money (unless some measure of credit contraction is continued) will be wholly in gold. In practice the Central Bank is likely to continue the credit contraction, thereby carrying deflation further than international equilibrium by itself would require. Considering the difficulties and distresses anyhow involved in deflation, this may be highly injurious.

It may be pointed out that the *repatriation* of foreign money is not amenable to treatment by dealings in forward exchange. A man can be deterred from investing temporarily abroad if he cannot sell foreign currencies forward except at a discount. But one who has already invested abroad, and who can no longer make any net gain from the rate of interest, is not likely to be induced to *leave* his money abroad a little longer by the opportunity of selling it forward in the foreign exchange market on more favourable terms.

If Mr. Keynes's forward exchange plan is to be effective, it must be at the stage at which Bank rate diverges from foreign Bank rates. That is to say, when a Central Bank is faced with adverse foreign exchanges and puts up Bank rates, it should at the same time buy forward exchange at a premium in order to avoid attracting foreign money. Or when the foreign exchanges are favourable and Bank

rate is lowered, the Central Bank should sell forward exchange at a discount in order to avoid an outflow of short-term money.

If the inflow or outflow of foreign money is *completely* counteracted, there will nevertheless be some further re-adjustment necessary after underlying equilibrium has been attained. For, to take the case of an adverse exchange position and a high Bank rate, if there is no inflow of foreign money, the exchange position will remain adverse till underlying equilibrium is restored, and all the time gold will be flowing out. If the Central Bank is to maintain its reserves up to a normal standard, it must then take steps to bring the gold back by a further spell of credit contraction.

For example, suppose that the country normally holds gold reserves of 100 millions of currency units, and that owing to a rupture of underlying equilibrium it starts losing a million a week. It puts up Bank rate, and there results an inflow of foreign money of a million a week, so that the loss of gold is completely checked. Suppose that after twenty weeks credit has been sufficiently contracted to re-establish underlying equilibrium, and that the inflow of foreign money has continued undiminished, so that no gold has been lost but the country has become a short-term debtor to the amount of 20 millions. As soon as Bank rate is put down to the world level, 20 millions of foreign money will be withdrawn and 20 millions of gold lost.

But if the inflow of foreign money had been prevented, the outflow of gold would have continued, and at the end of the twenty weeks the country would have been short of 20 millions of gold just the same.

The only substantial harm that the inflow of foreign money might do is to *delay* the credit contraction, so that the period over which foreign balances are accumulating exceeds that over which, in the alternative, gold would be flowing out.

In the example given it is assumed that there is no such delay. But it may be that, if Bank rate is put up

to the level at which it would secure underlying equilibrium with reasonable rapidity (say, in twenty weeks), the inflow of foreign money would *more* than offset the adverse balance of payments. If the inflow amounts to two millions a week, the accumulated short-term indebtedness will be 40 millions at the end of twenty weeks. The Central Bank would probably regard as excessive a rise of Bank rate that not merely checks gold exports but brings about gold imports of a million a week. It would be satisfied with a more moderate rise, and the result would be to prolong the process of restoring equilibrium for more than twenty weeks. Incidentally, the inflow of gold would tend to make Bank rate ineffective, but that tendency could be counteracted by sales of securities in the open market.

It would seem therefore that what is wanted is not to stop the inflow of foreign money altogether during a credit contraction, but to prevent the inflow from reaching such proportions as to cause an actual inflow of gold.

Now if it were necessary to check the inflow of foreign money *altogether* at a time when the exchanges are at the gold export point, the device of buying forward exchange at a premium would break down, and an extension of the gap between the gold points would help to avert the breakdown by giving the device a wider margin within which to operate. But if all that is required is to prevent such an inflow of foreign money as will cause an importation of gold, the extension of the gap is quite unnecessary.

Exactly parallel reasoning applies to the case where the Central Bank seeks to correct favourable foreign exchanges by lowering Bank rate. There is no substantial advantage in counteracting so much of the outflow of foreign money as merely offsets the underlying tendency towards an inflow of gold.

Thus the Central Bank will want to buy forward exchange at a premium at times when spot exchange is at a discount and possibly at the gold import point; it will want to sell forward exchange at a discount when spot exchange is at a premium. Under those conditions the

2 per cent. gap between the buying and selling prices of gold is quite superfluous.

Moreover, if we suppose a contingency to arise in which for any reason it is thought desirable to check an inflow of foreign money when there is an outflow of gold, or to check an outflow of foreign money when there is an inflow of gold, it appears to me that Mr. Keynes's 2 per cent. gap would go a very little way towards solving the practical problem presented. If the disturbance of equilibrium is so limited that a 1 per cent. premium on gold (with possibly a 2 per cent. premium on the most highly appreciated foreign currency) will check it, it hardly presents a problem at all. Any serious disturbance will drive the exchanges to the gold point in spite of the 2 per cent. gap.

If the proposal were otherwise unobjectionable, even a very limited usefulness might justify its adoption. But there are, I think, some substantial risks attendant upon it.

Mr. Keynes calls attention to one possible objection. An increase of the margin of fluctuation of the exchanges, "whilst well enough for a country which is not a depository of part of the international short-loan fund, is against the interests of a financial centre which aspires to be an important depository of such funds" (vol. ii., p. 330).

His reply to the objection is that so long as the Central Bank offers to buy and sell forward exchange at quoted rates, the foreign depositor can guard himself against exchange risks. But I do not think this really disposes of the objection. If a financial centre aspires to be an important depository of the international short-loan fund, that does not mean that it wishes to attract balances seeking fractional gains in the rate of interest over short periods. This is the very thing which Mr. Keynes's proposals are designed to discourage. The balances which a financial centre would wish to attract are those which form the *reserves* of foreign banks and especially of foreign Central Banks, and those which are ancillary to international clearing operations.

A foreign Central Bank holds a sterling reserve as a support for its own currency in the foreign exchange market.

Mr. Keynes suggests that, if it could not rely on the stability of sterling, it could protect itself by selling forward sterling. But that would mean nullifying the sterling reserve by associating it with an equal sterling liability.

If one Central Bank led the way in establishing a 2 per cent. gap between buying and selling prices of gold, it would find itself at a disadvantage as a depository for foreign banks' reserves. If, as Mr. Keynes recommends, all Central Banks introduce the change simultaneously, no one of them would be at a disadvantage. But in that case the whole system of relying on foreign exchange as a currency reserve would be threatened.

Suppose a country *X* to rely on reserves of foreign exchange held in two centres *A* and *B*, in each of which the Central Bank buys gold at a discount of 1 per cent. and sells it at a premium of 1 per cent. *X* will presumably aim (1) at keeping a suitable proportion of its reserve at each of the two centres (say, half at each), and (2) at buying exchange at or near the import gold point and selling it at or near the export gold point.

Now let the currency of *A* appreciate and that of *B* depreciate, so that exchange on *A* is worth 2 per cent. more than exchange on *B*. If we disregard the expenses of transporting gold between *A*, *B* and *X*, then *X* will be buying exchange on *B* at a discount of 1 per cent. and selling exchange on *A* at a premium of 1 per cent. This is in itself profitable. But the effect is to deplete the reserve of exchange on *A* and to increase that on *B*. So long as the country follows a mechanical policy of buying and selling exchange at the prescribed prices, it will always be tending to accumulate reserves in the weaker currencies and to lose those in the stronger. Consequently whenever the necessity arises of protecting the exchange position of the country as a whole, it is likely to have to sell depreciated exchange.

When the possible extent of appreciation or depreciation is a very small fraction, this is no great disadvantage. It will always be easy for the country to readjust the amount of exchange it holds on each of the foreign centres

at a small sacrifice. But when the possible gap is enlarged to 2 per cent. or more, a country which tries to keep its reserves at different centres close to prescribed proportions would be frequently buying at a premium and selling at a discount. The effect would be seriously to discourage the practical use of the gold exchange standard.

Mr. Keynes does not deal with the position of a financial centre in all its aspects. Variable foreign exchanges interfere seriously with acceptance business. An importer of goods in any country, who arranges an acceptance credit with a foreign centre, binds himself to provide the requisite sum at that centre at the maturity of the bill. If there were an appreciable exchange risk, he would seek to protect himself against it. He would have to buy forward exchange. When there is a big acceptance business, as in London, there would result a correspondingly big mass of forward purchases of the currency. There would be no corresponding mass of forward sales, for even if the foreign deposits, etc., in London exceed the outstanding acceptances on behalf of oversea traders, the holders of the former would in general wish to keep them in the form of sterling assets.

The forward exchange market would be quite incapable of absorbing one-sided transactions of such magnitude. Perhaps Mr. Keynes would contemplate the Bank of England undertaking it. That would mean that the Bank would become a forward buyer of the currencies of the various foreign countries concerned. It could not, in the first instance, accompany its forward purchases with equivalent spot sales because it would not possess the necessary spot exchange. It would therefore have to assume the exchange risk, on a miscellaneous assortment of currencies, some of very inferior standing. To such an arrangement there would, I think, be grave objections.

Mr. Keynes does not confine himself to the two proposals to which I have referred. He also suggests "various ways by which a Central Bank can fortify itself with a command over liquid foreign resources, so that it can vary the amount of these on a large scale and thus offset incon-

venient fluctuations in the rate of foreign lending (short-term or long-term) by the market," e.g. bigger free gold reserves, in excess of statutory minima, large liquid balances in foreign centres, reciprocal overdraft facilities among Central Banks, or borrowing and lending arrangements with a Supernational Bank (pp. 310-11).

These expedients would enable a Central Bank to meet an inflow or outflow of foreign money with a corresponding increase or decrease of its own foreign resources. Suppose it raises Bank rate to correct an adverse exchange position, and an inflow of foreign short-term money ensues, in excess of the pre-existing adverse balance. The Central Bank, instead of trying to counteract the inflow of foreign money, either by moderating the increase of Bank rate or by buying forward exchange at a premium, might simply allow the balances to come, and accumulate an extra reserve of foreign resources (i.e. gold and foreign exchange), so that when the time comes to lower Bank rate and let the foreign money go, this extra reserve can be drawn upon.

The extra reserve ought to take the form of foreign exchange, not gold, for, if gold is taken, it will tend to cause stringency in other countries, and intensify the underlying disequilibrium. The purchase of foreign exchange, on the other hand, tends to promote ease in other countries.

As I have already pointed out (above, p. 418), the acquisition of additional resources by the Central Bank will tend to make Bank rate ineffective, and it will probably have to sell securities in its own market to correct the tendency. A stage might be reached at which it had no more securities suitable for sale, and its efforts to make Bank rate effective by that method would fail. This contingency throws an interesting light on the true nature of the purchases of forward exchange which Mr. Keynes recommends. For the purchase of forward exchange combined with the sale of spot exchange is essentially a *lending* of foreign exchange combined with a *borrowing* of the country's own currency. We may regard the Central

Bank as making Bank rate effective by borrowing in the market instead of by selling securities.

Whatever the practice followed, it is very necessary to remember that the migration of short-term money is only a part of the complex of causes affecting the foreign exchange market, and it is quite impossible for the Central Bank to distinguish it from the rest. No procedure which depends upon accurate contemporaneous knowledge of the movements of short-term money is practicable. I think possibly the dealings in forward exchange will be found most useful as a *test* of the position.

If the Central Bank is contracting credit by means of a high Bank rate, and wishes to know whether underlying equilibrium has been attained, it can push up the premium on forward exchange to the point at which the gain in interest to a short-term investor is just offset. If the result is a renewed outflow of gold, the inference is that credit contraction must be continued.

No such test can be conclusive; it can at best give some indication of the position. For one thing some of the foreign money that has already come will probably be withdrawn because it is needed elsewhere, while the premium on forward exchange will prevent new money coming to replace it. And in any case these movements of money from one country to another are sometimes due not to short-term rates of interest at all but to quite different motives, especially to loss of confidence in a currency or to political motives. Movements so caused are apt to be the biggest and the most disturbing.

My general conclusion would be that Mr. Keynes's proposal for Central Banks to deal in forward exchange is a valuable one and ought to be adopted, but that the proposal for a 2 per cent. gap between the buying and selling prices of gold is open to objections which greatly outweigh its not very substantial advantages.

Greater freedom in the accumulation and release of gold and foreign exchange reserves by Central Banks would, in my opinion, be highly advantageous. In principle I think that every Central Bank should be free to deal with

its reserves as it may think fit, and to reduce them to any extent that circumstances may require. The bank ought not to be restricted by a law limiting its fiduciary issue or requiring a minimum proportion of its note issue or of its demand liabilities to be covered by gold or even by gold and foreign exchange. Where those responsible for the Central Bank of any country are not technically competent to take proper advantage of complete freedom, some limitation may be desirable, but all limitations ought to be subject to waiver with the consent of the Government. This is an unsatisfactory arrangement because there is no certainty that the personnel of the Government will be any more competent than that of the Central Bank, and divided responsibility is itself an evil. There is therefore a very strong presumption in favour of complete freedom from reserve restrictions.

It is perhaps relevant to add that a proper use of the proposed methods of dealing with the international movements of short-term money would presuppose a fundamental change in one important respect in the attitude of those engaged in financial affairs and particularly of those responsible for the policy of Central Banks, towards the business of credit regulation. It is not merely usual but almost universal among people practically concerned in finance to regard the attraction of foreign money as the principal or indeed the sole aim of a rise of Bank rate. Mr. Keynes's proposals would require them to regard the attraction of foreign money as a vexatious and undesirable complication, interfering with the attainment of the true purpose, a compression of the consumers' income. Similarly, the reduction of Bank rate, instead of being regarded as a measure for encouraging external short-term lending, must be accepted as a measure for bringing about an enlargement of the consumers' income. Personally, I think this change of attitude more important than any more objective result to be anticipated from the proposals.

The foregoing discussion is quite general and not restricted to the circumstances of any particular country, and I think it requires a certain amount of qualification

in its application to this country. The United Kingdom is both a short-term creditor and a short-term debtor on a very large scale. It also has the most highly developed discount market and money market in the world, so that there are the best facilities for placing and withdrawing money at competitive rates of interest. London is therefore peculiarly exposed to movements of foreign money.

Nevertheless I do not think that the Bank of England ought usually to try to prevent such movements. It should rather regard them as a means of spreading the influence of its own credit policy to other countries. Only on those occasions when English conditions are out of harmony with world conditions, and the appropriate remedy for the former would be likely to have unfavourable reactions on the latter, should steps be taken to insulate the London money market. Now this is not likely to be a frequent occurrence under normal conditions. When a number of countries are returning from inconvertible paper to gold, they are likely to find themselves in different phases of the trade cycle and with discrepant internal price levels, so that a credit policy which is desirable for some may be disastrous for others. But once they have settled down to gold for a few years, the international character of credit movements is sure to make itself felt, and approximately the same credit policy will usually be appropriate to all at the same time. In deciding and applying the appropriate credit policy, the Bank of England should take the initiative, and it should rely on the international influence of the London money market as contributing materially to bring about the co-operation of other countries.

CHAPTER VIII.

REMEDIES FOR UNEMPLOYMENT.¹

I. REDUCTIONS OF WAGES AND DEVALUATION.

IN this memorandum I propose to examine from the monetary standpoint the conditions that must be satisfied by any remedy for unemployment.

Suppose a community with a proportion of its productive power unemployed, and suppose that the consumers' income and outlay balance at 100 millions of currency units a month :—

<i>Consumers' income :—</i>	<i>Millions.</i>
Derived from production of	
Home Trade Products	60
Foreign Trade Products	40
	<hr/>
Total	100
 <i>Consumers' outlay :—</i>	
On Home Trade Products	60
On Foreign Trade Products. . . .	35
On External Investment	5
	<hr/>
Total	100

In order to increase employment by, say, 10 per cent., *either* the consumers' income and outlay must be increased

¹ This memorandum was written in July, 1930, for the Committee on Finance and Industry, presided over by Lord Macmillan, and must be read as relating to the circumstances at that date. It was printed with the Committee's Minutes of Evidence (vol. ii., pp. 315-21), and is here reproduced by permission of the Controller of H.M. Stationery Office.

by 10 per cent. (or thereabouts), *or* the amount of employment afforded by a given outlay must be increased. If, as is probable, there is a disparity between wages and prices, so that profits are below their normal proportion, a 10 per cent. increase in consumers' income and outlay will give less than a 10 per cent. increase in employment. But in what follows this complication will be disregarded. It affects the extent of the increase needed in the consumers' income and outlay, not the conditions on which any increase depends.

If the possibility of the character of production being so changed that a given outlay affords more employment be left out of account, the second alternative means a reduction of wages. If wages be reduced in the proportion of 10 to 11, the consumers' income of 100 millions a month will represent 10 per cent. more people employed. The actual effects of such a reduction of wages would be complicated, and I will not attempt to follow them out. It is sufficient to indicate that employment can be increased in this way.

If the country had an inconvertible paper currency, it would be perfectly practicable to expand credit (and the currency) to the extent necessary to increase consumers' income and outlay by 10 per cent. If wages remained unchanged, the desired increase in employment could be given. The same result could be secured with a gold standard (the international price level being assumed to be unchanged) through a devaluation of the currency, a reduction of its gold parity in the proportion of 10 to 11.

II. LIMITATIONS ON EXPANSION WITH A GOLD STANDARD.

But with a gold standard and an unalterable parity, an increase in the consumers' income and outlay will meet with obstacles.

Suppose that such an increase begins in the consumers' outlay, the consumers starting to spend an additional 10 millions a month from balances (in other words there is an increase in velocity of circulation). The consumers'

outlay is thereby raised from 100 to 110 millions. If it is divided in the same proportion as before among the possible objects of expenditure, the total outlay on each group will be—

	<i>Millions.</i>
On Home Trade Products	66
On Foreign Trade Products	$38\frac{1}{2}$
On External Investment	$5\frac{1}{2}$
	<hr/>
Total	110

The income derived from home trade products will thus be raised to 66 millions. But the outlay on foreign trade products will have little effect on the consumers' income. It will go mainly to increase imports and will only stimulate productive activity in so far as it is applied to buying home-produced foreign trade products.

The activity of producers who compete in any import or export market depends mainly on the state of demand in that market *as a whole*. An increase in the home demand for their products is small compared with the world demand, though, no doubt, proximity and other advantages would enable them to get something more than a purely proportionate share of the new demand. Suppose that the home producers supply 1 million out of the $3\frac{1}{2}$ millions of additional demand for foreign trade products. Then the consumers' income becomes the following:—

Derived from production of	<i>Millions.</i>
Home Trade Products.	66
Foreign Trade Products	41
	<hr/>
Total	107

There is therefore a departure from equilibrium in two distinct respects:—

(a) Consumers' outlay exceeds consumers' income by 3 millions a month, so that consumers' balances are being drawn upon to that extent.

(b) The debit of $5\frac{1}{2}$ millions for external investment

exceeds by 3 millions the surplus of the production over the consumption of foreign trade products.¹

This state of things cannot continue. Not only will the depletion of consumers' balances sooner or later lead to a reduction of consumers' outlay and therefore of consumers' income, but the adverse balance of 3 millions will tend to be withdrawn in gold, a contraction of credit will become necessary, and the reduction of consumers' income and outlay will be hastened.

Substantially the same reasoning applies to the case where the increase begins in the consumers' income. Let traders start increasing output, financing themselves with bank advances. In the first instance, producers of foreign trade products and of home trade products might be equally affected, and the consumers' income becomes—

Derived from production of		<i>Millions.</i>
Home Trade Products	. . .	66
Foreign Trade Products	. . .	44
Total		110

If the consumers' outlay is divided in the same proportions as before, it becomes—

		<i>Millions.</i>
On Home Trade Products	. . .	66
On Foreign Trade Products	. . .	38½
On External Investment	. . .	5½
Total		110

So far as home trade products are concerned, the additional output finds an equivalent additional demand. But the additional outlay of 3½ millions a month on foreign trade products will be mainly on imports, and only a little of it (say 1 million) will go towards absorbing the additional

¹ The surplus of the production over the consumption of foreign trade products is equal to the surplus of exports over imports. Exports and imports differ from production and consumption in that they exclude those foreign trade products which are both produced and consumed at home from both sides of the account.

output of 4 millions a month of foreign trade products. Nothing will have happened to enable the producers to dispose of the other 3 millions any better than they could before. This part of the additional output (and therefore of the additional income) will be a flash in the pan. Consumers' income will therefore shrink to 107 millions. But then the outlay on home trade products will shrink in proportion and fall to 64.2 millions. This will react in turn on the consumers' income, and in fact the shrinkage of income and outlay must proceed till both have reverted to the former total of 100 millions.

Thus whatever assumptions we make, it is clear that, with a gold standard, an increase of the consumer's income and outlay beyond the point indicated by international equilibrium is impossible, so long as the proportional distribution of the consumers' outlay between home trade products on the one hand, and foreign trade products and external investments on the other remains unchanged. For if the outlay on home trade products increases, the income derived from producing them increases by an equal amount. Only a *part* of this additional income will be spent on home trade products. The rest will be spent on foreign trade products and external investment, and will give relatively little additional income to home producers of those products. The assumed increase in the outlay on home trade products cannot be maintained, because there is not a sufficient addition to the consumers' income of the community as a whole.

III. MODIFICATIONS OF THE BALANCE OF PAYMENTS.

But if the proportional distribution of the consumers' outlay between home trade products, foreign trade products and external investment is altered, or if the balance of payments is modified in any other way, this argument requires qualification.

It is probable that there will be some modification even if the free play of economic forces is not interfered with. The question is not entirely one of elasticity of demand,

for the increase in the consumers' outlay is accompanied by changes in the relations of the different classes of incomes to one another. There will be an increase in the numbers of wage-earners approximately in proportion to output, but not necessarily an increase in rates of wages. There will be very little increase in those incomes (interest, rent and salaries) which compose overhead expenses, but a substantial increase in net profits, that is to say, an increase more than in proportion to output. This will be so even if there is no increase in the price level.

A large proportion of any addition to profits is likely to be applied to investment. And in the conditions assumed (with the existing capital resources of the country under-employed) this investment will be largely external.

If external investment is increased more than in proportion to the other objects of outlay, the balance of payments will be all the more unfavourable. And there is no presumption that the expenditure on foreign trade products will increase appreciably less in proportion than on home trade products. So we are led to the conclusion that the obstacles in the way of an increase in employment through an increase in consumers' income and outlay are not less but greater than as assumed in our illustration.

IV. PROTECTIVE TARIFFS.

Now it is possible to modify the balance of payments by interference. For example that is the effect of a protective tariff. To illustrate the operation of a tariff we must make a further subdivision of foreign trade products into exportable and importable goods. (We can for our present purposes ignore the existence of goods on the borderline, of which sometimes there is an exportable surplus and sometimes a deficiency supplied from imports.) Suppose the monthly quantities are (in millions):—

Importable Goods:—

Produced	15
Add Imported	10
	—
Consumed	25

Exportable Goods :—

Produced	.	.	.	.	.	25
<i>Deduct</i> Exported	.	.	.	.	.	15
						—
Consumed	.	.	.	.	.	10

Foreign Trade Products :—

Produced :

Importable	.	.	.	.	.	15
Exportable	.	.	.	.	.	25
						—
Total	.	.	.	.	.	40

Consumed :

Importable	.	.	.	.	.	25
Exportable	.	.	.	.	.	10
						—
Total	.	.	.	.	.	35

If a protective tariff is imposed (or existing protective duties are increased), the immediate effect is to raise the prices of importable goods above world prices. This rise of price has the double effect of stimulating the home supply and reducing the home demand. The extent depends in each case on the factor of elasticity. If for the sake of simplicity we assume elasticity of demand to be unity (i.e. demand shrinks just in proportion to the rise of price), and if we suppose prices to rise by one-ninth, the quantity consumed is reduced by 10 per cent. and the outlay upon it remains at 25 millions. Suppose that home production increases by 10 per cent. It becomes the equivalent at *world prices* of $16\frac{1}{2}$ millions, and at the prices in the home market, which are one-ninth higher, $18\frac{1}{2}$ millions. At world prices consumption is equivalent to $22\frac{1}{2}$ millions and home production to $16\frac{1}{2}$, so that imports are reduced from 10 millions to 6. Upon the 6 millions of imports the Government receives duty to the amount of two-thirds of a million, which may be counted as an addition to the consumers' income. Consumers' income becomes :—

Derived from :—

Home Trade Products	.	.	.	60
Foreign Trade Products	.	.	.	43 $\frac{1}{2}$
Import Duties	.	.	.	$\frac{2}{3}$
				<hr/>
				104

But consumers' outlay is still :—

Home Trade Products	.	.	.	60
Foreign Trade Products	.	.	.	35
External Investment	.	.	.	5
				<hr/>
				100

Equilibrium is doubly upset, consumers' income exceeds outlay by 4 millions, and there is a favourable balance of payments of 4 millions. Consumers' outlay on foreign trade products and external investment must be increased by 4 millions or 10 per cent. We may suppose a new equilibrium as follows :—

Consumers' Income :—

Home Trade Products	.	.	.	66
Foreign Trade Products	.	.	.	43 $\frac{1}{2}$
Import Duties	.	.	.	$\frac{2}{3}$
				<hr/>
				110

Consumers' Outlay :—

Home Trade Products	.	.	.	66
Foreign Trade Products	.	.	.	38 $\frac{1}{2}$
External Investment	.	.	.	5 $\frac{1}{2}$
				<hr/>
				110

These figures are not exact, because the increased demand for foreign trade products would be met partly from home production, and the additional imports would yield additional duty. But it is not necessary to follow out these refinements.

The immediate efficacy of protection as a remedy for unemployment depends upon the extent of the shrinkage of imports that it causes. Where the home supply is easily stimulated a moderate duty may produce a great effect. For example, where the industry concerned already has a sufficient capacity to supply the entire home market, but is under-employed, a duty which just enables it to be fully employed will improve employment both directly and indirectly at a very slight cost to the consumer. On the other hand, where, as in agricultural production, the law of diminishing returns operates, a relatively large increase of price will bring about a relatively small increase in production. And if the demand for the products is inelastic (as it is apt to be with agricultural products) the effect on imports is all the less.

It would be out of place in this memorandum to enter upon anything like a systematic discussion of the policy of protection in relation to the present circumstances of this country, and I will confine myself to the following comments :—

(a) A protective tariff could hardly be considered as a purely temporary or emergency measure. The uncertainty due to a fluctuating tariff is itself a serious disadvantage to trade. The tariff would therefore have to be considered as a permanent measure, and this aspect of the matter could not fail to be the more important.

(b) The field favourable to protection in British trade is very limited. Very little is to be gained from protecting agricultural products. Even among the imports officially classified as manufactured, some important groups (such as petroleum and non-ferrous metals) are really simply industrial materials which have been through a preliminary process.

(c) Protection labours under the disadvantage that whatever it does in one country to accelerate revival is at the expense of the others. The interests of this country imperatively require revival in the world generally. Only so can our export industries recover. It may be true that our export industries have been permanently impaired by

certain injurious developments in recent years, independently of the trade depression. But even so reduced, the export industries must continue to form a vital part of our economic activity for an immeasurably long time to come.

V. GOVERNMENT EXPENDITURE.

The balance of payments can be modified by interfering with the distribution of the consumers' outlay. Suppose that the Government raises money and spends it on home trade products. If the money be assumed to be provided out of the consumers' outlay (whether by taxation or by loans floated in the investment market and subscribed out of genuine savings), then the Government's expenditure will take the place of an equal amount of private expenditure. If the money is raised by loan it will take the place of private *capital* expenditure.

The Government's expenditure would in practice be limited to capital expenditure, for its current expenditure cannot be arbitrarily increased for such a purpose. If the private capital expenditure which it replaces were internal, clearly nothing would be accomplished. One form of internal capital outlay would be substituted for another. And were the Government to spend the money on enterprises which would otherwise have been ripe and suitable for an appeal to the market for capital, that is just what would happen. The private demands on the capital market for internal investment would be diminished by the amount of the Government's demands.

But if the Government confines itself to enterprises which are either not suitable for private capitalists or, if suitable, are not ripe, then the private demands on the capital market will be undiminished. The resources of the capital market will be reduced by the amount drawn from them by the Government loans, and the amount provided by it for other investments, internal and external, must be cut down.

How will the reduction be divided between the two classes of investment? Clearly it will fall mainly on the

external. A reduction of external investment falls on the world capital markets, and makes comparatively little impression either upon the total investible funds available or upon the long-term rate of interest in international centres. An equal reduction of internal investment may cause a severe shortage of capital within the limits of one country. That shortage can be avoided by people selling international securities to foreign centres, to provide money either for capital outlays of their own or for subscribing to new issues brought out by others on attractive terms. The difference in terms adequate to attract money away from foreign securities and foreign issues would not be great enough to be an appreciable deterrent on internal capital enterprises.

For example, the annual new internal investment in the United Kingdom has been estimated from the Census of Production of 1924 at £250,000,000. The total annual new investment in the world, outside the United States, cannot be less than ten times as much, while the United States alone probably accounts for more than £2,000,000,000. If we suppose a loan of £100,000,000 to be raised by the British Government in London, it is clear that even to provide half that sum in a year by cutting down investment in the United Kingdom from £250,000,000 to £200,000,000 would cause an intense scarcity of capital and great pressure on the market, whereas the world investments could suffer a reduction equal to the whole £100,000,000 with a very moderate disturbance.

We may therefore suppose the Government to divert from external investment a very large proportion (say, 90 per cent. or more) of whatever sum it devotes to capital outlay. Reverting to the numerical illustration used above, let the sum so diverted be 3 millions a month. Consumers' outlay (in millions a month) becomes—

Home Trade Products	60
Foreign Trade Products	35
Subscribed to Government Loans . .	3
External Investment	2
	<hr/>
	100

Production of foreign trade products will continue unaffected at 40 millions a month, so that there is a favourable balance of payments of 3 millions. To regain equilibrium the consumers' income and outlay must increase sufficiently to raise the outlay upon foreign trade products and external investment from 37 to 40 millions, i.e. about 8 per cent.

Consumers' outlay will then be :—

Home Trade Products	65
Subscribed to Government Loans	3
Foreign Trade Products, and External Investment	40
	<hr/>
	108

Consumers' income will be :—

Derived from production of	
Home Trade Products	65
Foreign Trade Products	40
Government Works	3
	<hr/>
	108

The proportion by which consumers' income and outlay are increased is the proportion of the amount by which external investment is diminished (3 millions) to the remainder of the outlay on external investment and foreign trade products before the new equilibrium is attained (37 millions). This calculation makes no allowance for any increase that is likely to occur in the production of foreign trade products. There is an increase in the consumption of foreign trade products, and, as already pointed out, the some producers of foreign trade products will get more than their proportionate share of this additional demand. If their production is increased by 1 million, consumers' outlay must be increased by a further $2\frac{1}{2}$ million, and we get :—

Consumers' Outlay :—

Home Trade Products	66½
Subscribed to Government Loans	3
Foreign Trade Products and External Investment	41
	<hr/>
	110½

Consumers' Income :—

Home Trade Products	66½
Government Works	3
Foreign Trade Products	41
	<hr/>
	110½

To secure this favourable result, it is essential that the Government works be financed in such a way as to draw upon the resources of the investment market. If not, if, for example, they are financed by a creation of bank credit, there is no diminution of external investment.

In so far as the operation is successful in reducing unemployment, the Government and other public authorities will be saved charges for unemployment benefit and relief. The net amount to be raised will thereby be diminished, but that does not mean that more employment can be given by raising a given sum of money. The amount of employment given is determined not by the numbers employed on the works that the Government undertakes, but by the increase in consumers' income and outlay permitted by the change in the balance of payments. That depends on the amount of money raised from the investment market.

VI. DISCRIMINATION AGAINST FOREIGN INVESTMENTS.

It is not essential that the Government itself should raise the money. The desired end, a diversion of investible funds from external to internal investment, could be secured by a suitable discrimination against external investments, in the form, e.g., of an extra income tax. The result would

be to raise the prices of all home investments relatively to those of external. The market for new issues for investment at home would be improved, and people would be led to sell international securities in order to subscribe to them. This plan has the disadvantages (1) that no one can foresee the magnitude of the favourable balance to be secured by a given discrimination, (2) that a definitely temporary discrimination would have a very slight effect, whereas a permanent discrimination would have long-period effects which might be very undesirable, (3) that a fluctuating tax would introduce an intolerable element of uncertainty into the investment market.

As compared with direct Government expenditure it has the advantage of using private initiative to discover enterprises which promise an adequate yield and to take the risk. But while the planning of new enterprises is in any case a slow business, it is more difficult to regulate the pace of private action than that of the Government.

VII. INFLATIONARY EXPENDITURE BY GOVERNMENT.

In the case where the Government undertakes the expenditure, but does not raise any money at all from the investment market, financing its operations by a creation of bank credit, that is to say, by inflation, there is no direct effect upon the balance of payments.

The Government does here bring about an additional outlay on home trade products. But this is not part of the consumers' outlay, it is additional outlay created out of the void. And as fast as it is created it gives rise to additional *income* in the hands of the people whom the Government employs. This additional income in turn gives rise to additional outlay (not exactly equal in amount because a part of the income will be retained by the recipients in balances). In fact, as the purchasing power created by the Government passes into circulation it causes a progressive increase in consumers' income and outlay.

There follow all the results characteristic of an increase in consumers' income and outlay. The outlay is applied

in due proportion to foreign trade products and external investment, the balance of payments becomes adverse, and the preservation of the gold standard necessitates a credit contraction. The longer the Government continues its operations the greater the credit pressure must be. Room in fact must be made for short-dated Government securities among the assets of the banks by reducing the amount of the other assets.

This is a process that cannot be continued long without threatening the gold standard. A high Bank rate and other measures of credit restriction cannot be relied on to contract 'bills and advances automatically without friction, and the psychology of the market is likely to be influenced by the prospect of an extensive creation of credit in favour of the Government.

Thus these two plans for Government expenditure have opposite effects upon the credit situation. On the one hand, when the Government draws upon the resources of the investment market, and there is a favourable balance of payments, credit has to be induced to expand, Bank rate will be lowered, and other measures of credit relaxation will be resorted to. On the other hand, when the Government finances itself with bank credit, bank credit has to be contracted in other directions, and Bank rate must be put up.

VIII. EFFECTS ON CREDIT ABROAD.

These measures will affect international markets. In the one case the low Bank rate will tend to cause an outflow of temporarily investible balances, and in the other the high Bank rate will tend to cause an inflow. These tendencies may be counteracted by the charges for forward exchange, but, so far as they do operate, they offset in a greater or less degree the effects which the Government measures would otherwise have on the balance of payments. They will prevent or diminish the flow of gold which would otherwise occur, for the consumers' income and outlay cannot be *immediately* adjusted to the new circumstances.

In the first alternative we have a low Bank rate and

outflow of balances. The outflow of balances in itself tends to reduce interest rates and to relax credit abroad. If there is no outflow of balances, and if, consequently, in the interval before credit expansion has had its full effect upon consumers' income and outlay, there is an inflow of gold, the loss of gold from foreign countries will tend to produce credit restriction abroad. The outflow of balances mitigates or prevents this restrictive tendency. The Bank rate may reasonably be lowered to the point at which the outflow of balances wholly offsets the favourable balance of payments. The outflow of balances is a temporary phenomenon, and, as it subsides, the expansion of consumers' income and outlay will gradually secure equilibrium with the more favourable balance of payments.

In the second alternative the course of events is just the contrary. The inflow of balances tends to cause credit restriction abroad, and to prevent the outflow of gold which would otherwise cause credit relaxation abroad.

The first alternative makes the country a short-term creditor, the second makes it a short-term debtor. The loss of balances strengthens the country's credit position in the same way as an equal gain of gold; the gain of balances weakens it like a loss of gold.

For a small or financially insignificant country the international effects of its Bank rate and its export or import of gold could be neglected. But in applying the analysis to the United Kingdom, we have to take into account the predominant influence of London on world credit conditions. The widespread functions of London as a short-term lender for the purposes of international trade make the Bank of England's rate a factor in monetary conditions all over the world. And though the British gold reserve is much less than the American or the French, it is large enough to spare (under the existing law) quantities amounting to scores of millions sterling when public policy so requires. Such quantities have an appreciable effect upon world credit conditions, unless the recipient countries take deliberate measures to sterilise them.

Of all the ways of increasing consumers' income and

outlay the most satisfactory is a rise in the world price level, or more specifically an increase of consumers' income and outlay in the rest of the world. Cheap money in London, and a flow of funds from London for temporary investment elsewhere tend to bring this about. Dear money and the appearance of London as a temporary borrower or a restricted lender abroad tend to produce the contrary result. If there is no credit expansion abroad, then when the Government ceases its capital outlay, consumers' income and outlay must be reduced again to their former amount. But if credit expansion occurs abroad, consumers' income and outlay in this country can remain increased in the same proportion as in the rest of the world.

If this way is opened up, then the Government's capital outlay can be regarded as a purely temporary measure. And it may be pointed out that, with the condition that it is not to displace private enterprise in investment at home, it can hardly continue indefinitely.

Now the beneficial effect of capital outlay by the Government arises not so much from the direct employment given as from the favourable effect on the balance of payments and the consequent opportunity to lower Bank rate. If foreign countries could be relied on to reduce their Bank rates immediately by the same steps as the Bank of England and to take measures to expand credit as fast as it would expand here, it would not be necessary to do anything to maintain the balance of payments. But great as the international influence of the Bank of England is, the Bank is not an autocrat, and it could not rely on a rapid change from dear to cheap money in London being universally and immediately imitated elsewhere.

Whenever, therefore, this country being faced with a trade depression, a drastic reduction of Bank rate is desirable but cannot be immediately put into effect for fear of a loss of gold to foreign countries, there is a case for Government borrowing to affect the balance of payments

IX. FUNDING THE FLOATING DEBT.

But what affects the balance of payments is not the Government expenditure, but *the borrowing itself*. And the advantage of the favourable balance is the resulting cheap money. The desired end can be achieved by dropping out the expenditure on development works, and using the proceeds of the loan to extinguish Government floating debt in the hands of the banks and the money market.

The banks immediately take steps to fill the gap made in their assets through the extinction of short-dated Government securities by acquiring other short-dated securities, such as bills and advances. To do so, they must offer to lend and discount on favourable terms. Cheap money will thus be directly brought about. A part, it is true, of the new short-dated securities will take the form, directly or indirectly, of foreign lending. For example, cheap money will stimulate the acceptance business. But that merely means that the outflow of balances, which is in any case contemplated, takes place. Indeed, if there is a residue of short-dated domestic borrowing, which will leave a part of the favourable balance of payments uncovered, there will be an inflow of gold, which may have undesirable reactions upon credit abroad, and delay the looked-for expansion. As in the case where the funds raised by the Government are spent on development works, Bank rate should be lowered in the first instance to the point at which there is no import of gold.¹ There will follow an interval during which on the one hand the outflow of balances slackens and on the other consumers' income and outlay expand. Later the favourable balance of payments will cease, the shortage of investible funds having been made good by saving. If by that time there has not been a sufficient credit expansion abroad to enable the increased consumers' income and outlay to be maintained, Government borrowing and redemption of floating debt can be continued. The success of the operation

¹ If notwithstanding the low Bank rate gold threatens to flow in, the Bank of England could keep it out by buying foreign exchange.

depends upon conditions abroad. Against concerted efforts by foreign countries to prevent a credit expansion it would probably fail. With acquiescence abroad it would succeed. It is especially valuable in circumstances where Central Banks in general desire credit relaxation, but each is afraid to take the lead for fear of losing gold to the others.¹

It is by no means inapplicable to centres with a less powerful international position than London. In the period of French currency reconstruction, 1926-29, Paris was working mainly as a local national centre. The principal feature of the reform was a drastic reduction of the floating debt and especially of the Government's debt to the Bank of France. The requisite resources were supplied partly from taxation and partly from long-dated loans. In 1926 the assets of the Bank of France included net advances to the Treasury, direct and indirect, exceeding 40 milliards. By the end of 1928 this total had been reduced by nearly 30 milliards, *in addition* to the nominal reduction of 16½ milliards arising from the revaluation of the gold reserve. (A substantial *credit* balance in favour of the Treasury had grown up.) This gap of 30 milliards was made in the assets of the Bank of France at a time when the note issue was substantially below the amount required by the business of the country. The note issue rose from 52½ milliards at the end of 1926 to 62½ at the end of 1928 (and has since risen to 73 milliards).² Therefore in the two years, 1927 and 1928, 40 milliards of assets had to be found by the Bank of France.

The Bank was precluded from buying Government securities, and the new assets had to be either (1) French bills or advances, (2) foreign exchange, or (3) gold. The supply of eligible bills was very small in proportion, and the result was the acquisition by the Bank of enormous quantities of foreign exchange and gold, amounting by

¹ This was written when the gold standard was still in operation. When the gold standard is suspended, funding the floating debt would tend to make the foreign exchanges favourable and would have a deflationary effect.

² In July, 1930.

the end of 1928 to 32 milliards of the former and 11½ milliards of the latter (of which nearly 4 milliards were collected from the hoards of the French themselves).

The scarcity of bills was at the same time intensified by the measures taken to discourage the circulation of National Defence Notes, and the result was seen in a precipitate fall in discount rates. The market rate for three months' bills having exceeded 7 per cent. in October, 1926, fell to 1·82 per cent. in October, 1927, while Bank rate fell only from 7½ to 5. In the course of 1928 the effect of cheap money was felt in an increase in the supply of bills. Commercial discounts at the Bank of France rose from 2·1 milliards to 5·6 milliards, and the discounts and advances of the three big banks rose from 21·2 milliards to 29·5 milliards. Nevertheless discount rates did not rise above 3½ per cent. (to which rate Bank rate was lowered in January, 1928). Cheap money prevailed in France all through the stress of 1929.

And though Paris had for the time being no considerable acceptance business, yet the vast operations of the Bank of France as a purchaser of bills and deposits abroad had an appreciable effect on world credit conditions in 1927 and 1928. Indeed in the spring of 1927 the Bank of France deliberately tried to counteract this effect by buying gold instead of exchange.

Nevertheless it was not till the beginning of 1929 that the increase in the holding of foreign exchange was really stopped. The disposal of nearly 7 milliards of exchange and the absorption of 10 milliards (£80,000,000) of gold in the course of 1929 were among the causes of the contraction of credit and collapse of commodity prices which have ensued throughout the world.

At the time when the Bank of France was buying foreign exchange, the effect on discount rates outside France, though noticeable, was not on a decisive scale. But when a policy of redeeming floating debt in this country was resorted to from last November¹ onwards, the international results were much more marked. The scarcity

¹ 1929.

of bills drove the market rate of discount in London persistently below Bank rate. The Bank of England after some hesitation brought down its rate by successive stages from 5 per cent. (to which it had been reduced on the 12th December) to 3 per cent. on the 1st May,¹ and all the most important centres followed its example.

The result has been a general prevalence of cheap money, and for the time being measures for making the balance of payments temporarily favourable have ceased to have any relevance to the situation.

X. PRESENT NEED FOR CREDIT EXPANSION.

The trouble now is of a different kind. Given low discount rates, how is the credit expansion, to which they must if maintained sooner or later give rise, to be hastened? We have to view the world, or rather the gold standard countries which include far the greatest part of the world's economic system, as a single group.

Within that group projects for Government expenditure on works of development financed by genuine loan subscriptions cannot on balance do any good; they can only stimulate activity in some localities at the expense of others. For they draw upon the available investible funds of the world without increasing them. For expenditure financed by the creation of bank credit there is more to be said, but in one form or another the objections already indicated to this course might apply. Even if it were adopted on an international scale, so that all the most important countries were creating bank credit for their Governments simultaneously, there might still be no improvement in trade if the result were the end of cheap money. International action of this kind is anyhow impracticable. Though the problem is international, it is the particular action to be taken by this country that has to be considered.

At a time when every industry is under-employed, and shortage of demand threatens a further fall of prices in every direction, cheap money by itself does not easily induce

¹ 1930.

people to borrow. When every project promises a loss rather than a profit, even loans free of interest would fail to stimulate enterprise.

XI. OPEN MARKET POLICY OF A CENTRAL BANK.

The remedy is to be found in what in America is called an "open market" policy, the purchase of securities by the Central Bank in the open market. Every asset creates a liability, and the liabilities of a Central Bank are money. When the Bank of England buys securities, the total of bankers' deposits is increased. The joint-stock banks, holding more cash, become ready to increase their advances and discounts. Thus when the stimulus of cheap money offered to the *borrower* is insufficient, the stimulus of redundant cash reserves can be applied to the *lender*. This procedure was adopted by the Federal Reserve Banks in 1922 with conspicuous success, and they have repeated it more than once since then. They raised their open market assets to a high figure after the crisis last autumn¹ and have kept them high ever since. In fact, since January they have been at the highest level recorded for the time of year.

In the past three months the Bank of England has moved tentatively in the same direction. It is possible that the gold situation is regarded as an obstacle to more decisive action. But the gold demands which have arisen in recent months have not been of a kind to be materially affected one way or the other by credit policy. When the note circulation in France is not sufficient for the existing needs of business, it is increased by the sale of suitable assets to the Bank of France. The supply of eligible bills is limited, the Bank has ceased for the past eighteen months to add to its stock of foreign exchange, and the result is that gold is the only available asset to make good the difference. Absorption of gold is caused when the need is felt for an expansion of the note issue or when there is an increase of deposits at the Bank of France. For example, the addition of 2½ milliards (£20,000,000) to the public deposits at the beginning of July, when the proceeds of the Reparation Loan

¹ 1929.

issued in France were credited to the Sinking Fund account, caused intensified demands for gold.

Credit restriction in London and in the gold-using world can do nothing to check these demands for gold (unless it goes so far that the need for currency in France is diminished—a contingency which we need hardly contemplate). The right procedure would seem to be to part with the gold freely, and to refuse to let the loss of it affect the Bank of England's credit policy. As soon as the French note issue is sufficient for the needs of business the pressure ceases, and in any case it will not cease short of that point.

If there were an underlying disparity between the consumers' income in this country and elsewhere that might be more serious. But there is no reason to suppose that there is anything of the kind. The scarcity of currency causes the consumers' outlay in France temporarily to fall short of the consumers' income. The shortage once made good, the consumers' outlay recovers again. Other European countries are more or less in a similar position to France. That is to say, their absorption or release of gold depends mainly on the action of the Central Bank in adjusting its holding of foreign exchange or open market assets to the varying demands for currency. In the United States, where the discount market is the principal factor, the sterling exchange is in equilibrium, and it is likely that any measures of credit relaxation here would be accompanied by corresponding measures there, so that no loss of equilibrium would result.

It ought to be possible for the Bank of England to meet any demands for gold that are at all likely to be made either by France or by other Continental countries without reducing the reserve in the Banking Department to zero. But it might help to reassure the money market and facilitate expansion if the Bank and the Treasury agreed together to use the power of extending the fiduciary issue in case of need, and if this decision were made known to the public.

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